

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 646 785A

Injection pump  
Pump designation : PE6P120A320LS7869  
EP type number : 0 412 626 887

Governor  
Governor design. : RQV300...1050PA1078K  
Governor no. : 0 421 815 359

Cust. part No. : 9275445

### Customer-spec. information

Customer : LIEBHERR  
Motor : D 9406 TI  
Power KW : 300.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 165  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.65  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 6- 3- 5- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.30  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 291.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
 Tolerance  
 $\text{cm}^3/1000$  strokes : 5.0  
 Check tolerance  
 $\text{cm}^3/1000\text{s.}$  : 9.0

guide sleeve  
 travel mm : 3.66  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 1320  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm :  $\pm$  0.50

Rated speed rpm : 300  
 Rack travel in mm : 4.80  
 Tolerance mm :  $\pm$  0.10  
 Del. quantity  
 $\text{cm}^3/1000$  strokes : 25.0  
 Tolerance  
 $\text{cm}^3/1000$  strokes :  $\pm$  3.0  
 Check tolerance  
 $\text{cm}^3/1000\text{s.}$  :  $\pm$  6.0  
 Spreed  
 Tolerance  
 $\text{cm}^3/1000$  strokes : 6.0  
 Check tolerance  
 $\text{cm}^3/1000\text{s.}$  : 10.0

GUIDE SLEEVE POSITION  
 control lever  
 position degree : - 1  
 Rated speed rpm : 1185  
 Rack travel in mm : 11.00  
 Tolerance mm :  $\pm$  1.30

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117  
 guide sleeve  
 travel mm : 10.38  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.69  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 746  
 guide sleeve  
 travel mm : 6.20  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 353  
 guide sleeve  
 travel mm : 2.45  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 403  
 guide sleeve  
 travel mm : 3.18  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 450

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure  
 hPa : 1550  
 Del. quantity  
 $\text{cm}^3/1000$  strokes : 291.0  
 Tolerance  
 $\text{cm}^3/1000$  strokes :  $\pm$  1.0  
 Check tolerance  
 $\text{cm}^3/1000\text{s.}$  :  $\pm$  4.0  
 Spreed  
 Tolerance  
 $\text{cm}^3/1000$  strokes : 5.0  
 Check tolerance  
 $\text{cm}^3/1000\text{s.}$  : 9.0

##### CONTROL LEVER

control lever  
 position degree : 120.0  
 tolerance degree :  $\pm$  4.0

RATED SPEED  
 rack travel mm : 11.00  
 Rated speed rpm : 1105  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00  
 Rated speed rpm : 1190  
 Tolerance 1/min :  $\pm$  15  
 Rated speed rpm : 1220

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**LOW IDLE**

control lever  
position degree : 75.0  
tolerance degree : + - 4.0

**Testing:**

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm min. : > 8.00

Rated speed rpm : 400

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**TORQUE CONTROL**

Rated speed rpm : 1050  
rack travel mm : 12.30  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 10.20  
Tolerance mm : + - 0.10

Rated speed rpm : 800  
rack travel mm : 11.80  
Tolerance mm : + - 0.10

Rated speed rpm : 950  
rack travel mm : 12.00  
Tolerance mm : + - 0.10

Rated speed rpm : 600  
rack travel mm : 10.25  
Tolerance mm : + - 0.10

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**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 1050  
Pressure hPa : 1550  
rack travel mm : 12.30  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 550  
rack travel mm : 9.30  
Tolerance mm : + - 0.10

**MEASUREMENT**

Rated speed rpm : 1050  
Pressure hPa : 670  
rack travel mm : 11.00  
Tolerance mm : + - 0.05

Pressure hPa : 600  
rack travel mm : 9.80  
Tolerance mm : + - 0.10

**Start interlock**

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

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**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : 1550  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 281.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : 1550  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 301.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.90  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 14.0

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#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

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End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 11.03.97  
Test oil : ISO 4113

Combination No. : 0 402 744 802

Injection pump  
Pump designation : PES4P120A320RS7312  
EP type number : 0 412 724 803

Governor  
Governor design. : RQ400/1200PA1132-1  
Governor no. : 0 421 801 794

Cust. part No. : 51.11103-7469

**Customer-spec. information**

Customer : MAN  
Motor : D0824LFL06/LOH05  
Power KW : 114.0

**TEST BENCH REQUIREMENTS**

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10  
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

Start of delivery blocking  
Tolerance : + 0.10  
Check tolerance °NW : + 0.75

Barrel no. : 1

**BASIC SETTING**

Rated speed rpm : 1000

Rack travel in mm : 13.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 \_\_\_\_\_  
 Spred  
 \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 \_\_\_\_\_  
 Rated speed rpm : 400  
 \_\_\_\_\_  
 Rack travel in mm : 4.80  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 40.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spred  
 \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1258  
 guide sleeve  
 travel mm : 7.48  
 Tolerance mm : + - 0.15  
 \_\_\_\_\_  
 Rated speed rpm : 400  
 guide sleeve  
 travel mm : 3.62  
 Tolerance mm : + - 0.20  
 \_\_\_\_\_  
 Rated speed rpm : 1200  
 guide sleeve  
 travel mm : 7.00  
 Tolerance mm : + - 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 472  
 guide sleeve  
 travel mm : 5.36  
 Tolerance mm : + - 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 580

guide sleeve  
 travel mm : 7.00  
 Tolerance mm : + - 0.10  
 \_\_\_\_\_  
 Rated speed rpm : 1390  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + - 0.50

##### GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 600  
 \_\_\_\_\_  
 Rack travel in mm : 15.50  
 Tolerance mm : + - 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 206.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

##### CONTROL LEVER

control lever  
 position degree : 101.0  
 tolerance degree : + - 4.0  
 \_\_\_\_\_  
 RATED SPEED  
 rack travel mm : 12.05  
 Rated speed rpm : 1250  
 Tolerance 1/min : + - 8  
 \_\_\_\_\_  
 rack travel mm : 4.00  
 Rated speed rpm : 1335  
 Tolerance 1/min : + - 15  
 \_\_\_\_\_  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1400

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**LOW IDLE**

control lever  
position degree : 76.0  
tolerance degree : + - 4.0

**Testing:**

Rated speed rpm : 400  
rack travel mm : 4.80  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 470  
Tolerance 1/min : + - 20

Rated speed rpm : 300

CRT mm min. : > 7.00

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**TORQUE CONTROL**

Rated speed rpm : 1000  
rack travel mm : 13.05  
Tolerance mm : + - 0.05

Rated speed rpm : 1200  
rack travel mm : 13.05  
Tolerance mm : + - 0.10

Rated speed rpm : 700  
rack travel mm : 13.05  
Tolerance mm : + - 0.10

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**ANEROID/ALTITUDE COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.05  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.65  
Tolerance mm : + - 0.15

**MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 140

rack travel mm : 8.55  
Tolerance mm : + - 0.15

Pressure hPa : 500  
rack travel mm : 11.85  
Tolerance mm : + - 0.25

**Start interlock**

Rated speed rpm : < 280  
Rated speed rpm : > 320

Check  
speed 1/min : < 260  
Check  
speed 1/min : > 340

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1200  
Del. quantity  
cm3/1000 strokes : 208.0  
Tolerance  
cm3/1000 strokes : + - 3.0  
Check tolerance  
cm3/1000S. : + - 6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm3/1000 strokes : 218.0  
Tolerance  
cm3/1000 strokes : + - 3.0  
Check tolerance  
cm3/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 120.0  
Tolerance  
cm3/1000 strokes : + - 1.0  
Check tolerance  
cm3/1000S. : + - 4.0

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**STARTING FUEL DELIVERY**

Del. quantity  
cm3/1000 strokes : 206.0  
Tolerance  
cm3/1000 strokes : + - 15.0  
Check tolerance  
cm3/1000S. : + - 19.0

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LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 744 807

Injection pump  
Pump designation : PES4P120A320RS7380  
EP type number : 0 412 724 802

Governor  
Governor design. : RQV275...1200PA1232  
: 1K  
Governor no. : 0 421 815 552

Cust. part No. : CCEP5165 66-237

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 04-02-26 B4  
Power KW : 110.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity  
min. l/h : 95  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.00  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

## Start of delivery mark

\*NW after s.o.d. : -10.30  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

Barrel no. : 1

## Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 11.00  
Difference ° CS : 1.50

---

**CRT ZERO POSITION**

Rack travel in mm : 12.80  
Tolerance mm : + - 0.05

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**BASIC SETTING**

Rated speed rpm : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

Rack travel in mm : -6.70  
Tolerance mm : + - 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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**(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR**

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**GUIDE SLEEVE TRAVEL**

Rated speed rpm : 1272  
guide sleeve  
travel mm : 9.31  
Tolerance mm : + - 0.15

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Rated speed rpm : 325  
guide sleeve  
travel mm : 1.52  
Tolerance mm : + - 0.20

Rated speed rpm : 894  
guide sleeve  
travel mm : 6.60  
Tolerance mm : + - 0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 4.01  
Tolerance mm : + - 0.25

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + - 0.50

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**GUIDE SLEEVE POSITION**

control lever  
position degree : - 1  
Rated speed rpm : 1482

Rack travel in mm : 11.70  
Tolerance mm : + - 1.30

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**FULL LOAD DELIVERY AT FULL LOAD STOP**

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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**CONTROL LEVER**

control lever  
position degree : 296.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1265

Tolerance 1/min : + 15  
 rack travel mm : -8.80  
 Rated speed rpm : 1410  
 Tolerance 1/min : + 5  
 rack travel mm : -12.30  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1500

#### LOW IDLE

control lever  
 position degree : 253.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 325  
 rack travel mm : -6.70  
 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : < -4.70

Rated speed rpm : 390

#### TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 700  
 rack travel mm : -1.15  
 Tolerance mm : + 0.10

Rated speed rpm : 350  
 rack travel mm : -2.90  
 Tolerance mm : + 0.20

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1200  
 Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : -4.00  
 Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 500  
 Pressure hPa : 200  
 rack travel mm : -3.40  
 Tolerance mm : + 0.20  
 Pressure hPa : 320  
 rack travel mm : -2.75  
 Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 155  
 Rated speed rpm : < 260  
 Check speed 1/min : > 135  
 Check speed 1/min : < 270

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200  
 Rated speed rpm : 700  
 Del. quantity cm<sup>3</sup>/1000 strokes : 240.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 161.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity cm<sup>3</sup>/1000 strokes : 90.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 15.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 19.0

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LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + - 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 602

Injection pump  
Pump designation : PES6P120A320RS7359  
EP type number : 0 412 726 949

Governor  
Governor design. : RQ275/1050PA1217-1  
Governor no. : 0 421 801 798

Cust. part No. : CCEP 5152A 66-229

### Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR062045 R41  
Power KW : 223.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.70  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 20.25  
Tolerance mm : + 0.75

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

### Start of delivery mark

"NW after s.o.d. : -0.45  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

Barrel no. : 1

### CRT ZERO POSITION

Rack travel in mm : 13.30  
Tolerance mm : + 0.05

### BASIC SETTING

Rated speed rpm : 600

Tolerance mm	: + 0.05
Del. quantity cm <sup>3</sup> /1000 strokes	: 281.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spred	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0
Rated speed rpm	: 300
Rack travel in mm	: -7.30
Tolerance mm	: + 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 25.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 2.0
Check tolerance cm <sup>3</sup> /1000S.	: + 5.0
Spred	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1122
guide sleeve	
travel mm	: 6.36
Tolerance mm	: + 0.15
Rated speed rpm	: 300
guide sleeve	
travel mm	: 2.19
Tolerance mm	: + 0.20
Rated speed rpm	: 1050
guide sleeve	
travel mm	: 6.00
Tolerance mm	: + 0.10

Rated speed rpm	: 408
guide sleeve	
travel mm	: 5.26
Tolerance mm	: + 0.10
Rated speed rpm	: 480
guide sleeve	
travel mm	: 6.00
Tolerance mm	: + 0.10
Rated speed rpm	: 1330
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

##### GUIDE SLEEVE POSITION

control lever	
position degree	: 109
Rated speed rpm	: 600
Rack travel in mm	: 20.00
Tolerance mm	: + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure	
hPa	: 1000
Del. quantity cm <sup>3</sup> /1000 strokes	: 281.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.0
Spred	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

##### CONTROL LEVER

control lever	
position degree	: 276.0
tolerance degree	: + 4.0

RATED SPEED	
rack travel mm	: -1.00
Rated speed rpm	: 1115
Tolerance 1/min	: + 15
rack travel mm	: -9.30
Rated speed rpm	: 1240
Tolerance 1/min	: + 5

rack travel mm : -12.80  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 255.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : -7.30  
Tolerance mm : + 0.10

rack travel mm : -11.30  
Rated speed rpm : 395  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > -4.60

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -2.35  
Tolerance mm : + 0.20

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 400  
rack travel mm : -0.60  
Tolerance mm : + 0.15

Pressure hPa : 240  
rack travel mm : -1.55  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 195

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance : + 5.0  
cm<sup>3</sup>/1000S.  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 606B

Injection pump  
Pump designation : PES6P110A720RS7406  
EP type number : 0 412 716 810

Governor  
Governor design. : RQV300...1050PA1090  
: 1K  
Governor no. : 0 421 815 497

Cust. part No. : 9279607

---

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 926 TI-E A3  
Power KW : 230.0

---

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 125  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.65  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.60  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 179.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 6.10  
Tolerance mm : + 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 43.0

Tolerance cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1102  
guide sleeve travel mm : 10.05  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve travel mm : 1.86  
Tolerance mm : + 0.20

Rated speed rpm : 749  
guide sleeve travel mm : 6.11  
Tolerance mm : + 0.25

Rated speed rpm : 480  
guide sleeve travel mm : 3.75  
Tolerance mm : + 0.25

Rated speed rpm : 1330  
guide sleeve travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1179

Rack travel in mm : 12.80  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure hPa : 1450  
Del. quantity cm<sup>3</sup>/1000 strokes : 179.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever position degree : 118.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 11.60  
Rated speed rpm : 1080  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min : + 15

Rated speed rpm : 1230

##### LOW IDLE

control lever position degree : 78.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 6.10  
Tolerance mm : + - 0.10

Rated speed rpm : 250

CRT mm min. : > 8.40

Rated speed rpm : 420

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.60  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 11.55  
Tolerance mm : + - 0.15

Rated speed rpm : 800  
rack travel mm : 12.60  
Tolerance mm : + - 0.10

Rated speed rpm : 950  
rack travel mm : 12.60  
Tolerance mm : + - 0.10

Rated speed rpm : 600  
rack travel mm : 11.90  
Tolerance mm : + - 0.15

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1050  
Pressure hPa : 1450  
rack travel mm : 12.60  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.55  
Tolerance mm : + - 0.15

#### MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 860  
rack travel mm : 12.00  
Tolerance mm : + - 0.05

Pressure hPa : 710

rack travel mm : 11.20  
Tolerance mm : + - 0.10

Start interlock

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1450  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : 1450  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm : + - 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

#### LOW IDLE

Rated speed rpm : 350

Def. quantity  
cm<sup>3</sup>/1000 strokes : 43.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

**Edition** : 10.03.97  
**Test oil** : ISO 4113

**Combination No.** : 0 402 746 608

**Injection pump**  
**Pump designation** : PES6P120A320RS7359  
**EP type number** : 0 412 726 925

**Governor**  
**Governer design.** : RQ275/1050PA1275  
**Governer no.** : 0 421 801 805

**Cust. part No.** : CCEP 5157A 66-222

**Customer-spec. information**

**Customer** : RENAULT V.I.  
**Motor** : MIDR062045 F/C41  
**Power KW** : 152.0

**TEST BENCH REQUIREMENTS**

**Inlet Line** : 3.1

**Test oil inlet**  
**temp. °C** : 40  
**Tolerance °C** : + 2.0

**Overflow valve** : 2 417 413 078

**Inlet press. bar** : 2.5  
**Tolerance bar** : + 0.1

**Overflow quantity**  
**min. l/h** : 220  
**Tolerance l/h** : + 10.0

**Test nozzle holder**  
**assembly** : 1 688 901 101

**Opening pressure**  
**bar** : 208.5  
**Tolerance bar** : + 1.5

**Test Lines** : 1 680 750 008

**Outside diameter** : 6.0

**x inside diameter** : 2.0  
**x length mm** : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

**Test pressure bar** : 26.0  
**Tolerance bar** : + 1.0

**Prestroke mm** : 4.70  
**Tolerance mm** : + 0.05  
**Check tolerance mm** : + 0.10

**Rack travel in mm** : 20.25  
**Tolerance mm** : + 0.75

**Firing order** : 1- 5- 3- 6- 2-  
: 4

**Phasing** : 0-60-120-180-240  
**Tolerance** : + 0.30  
**Check tolerance °NW** : + 0.50

**Start of delivery mark**

**\*NW after s.o.d.** : -0.95  
**Tolerance** : + 0.50  
**Check tolerance °NW** : + 0.75

**Barrel no.** : 1

**CRT ZERO POSITION**

**Rack travel in mm** : 11.70  
**Tolerance mm** : + 0.05

---

**BASIC SETTING**

Rated speed rpm : 1050  
Del. quantity cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0  
  
Rated speed rpm : 275  
Rack travel in mm : -5.40  
Tolerance mm : + 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

---

**(B) SETTING OF INJECTION PUMP WITH GOVERNOR**

---

**GUIDE SLEEVE TRAVEL**

Rated speed rpm : 1122  
guide sleeve travel mm : 7.06  
Tolerance mm : + 0.15  
  
Rated speed rpm : 275  
guide sleeve travel mm : 2.44  
Tolerance mm : + 0.20  
  
Rated speed rpm : 1050

guide sleeve travel mm : 6.70  
Tolerance mm : + 0.10  
  
Rated speed rpm : 648  
guide sleeve travel mm : 6.18  
Tolerance mm : + 0.10  
  
Rated speed rpm : 375  
guide sleeve travel mm : 5.00  
Tolerance mm : + 0.10  
  
Rated speed rpm : 450  
guide sleeve travel mm : 6.00  
Tolerance mm : + 0.10  
  
Rated speed rpm : 1300  
guide sleeve travel mm : 11.50  
Tolerance mm : + 0.50  
  
Rated speed rpm : 873  
guide sleeve travel mm : 6.52  
Tolerance mm : + 0.10

---

**GUIDE SLEEVE POSITION**

control lever position degree : 109  
Rated speed rpm : 500  
  
Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

**FULL LOAD DELIVERY AT FULL LOAD STOP**

Rated speed rpm : 1050  
Aneroid pressure hPa : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

---

**CONTROL LEVER**

control lever  
position degree : 276.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1115  
Tolerance 1/min :  $\pm$  5

rack travel mm : -7.70  
Rated speed rpm : 1205  
Tolerance 1/min :  $\pm$  15

rack travel mm : -11.20  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

---

**LOW IDLE**

control lever  
position degree : 256.0  
tolerance degree :  $\pm$  4.0

**Testing:**

Rated speed rpm : 275  
rack travel mm : -5.40  
Tolerance mm :  $\pm$  0.10

rack travel mm : -9.60  
Rated speed rpm : 375  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. : < -3.50

---

**TORQUE CONTROL**

Rated speed rpm : 1050

Rated speed rpm : 600  
rack travel mm : 1.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.20

---

**ANEROID/ALTITUDE COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 1.20  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -0.60  
Tolerance mm :  $\pm$  0.20

**MEASUREMENT**

Rated speed rpm : 500  
Pressure hPa : 280  
rack travel mm : 0.65  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 160  
rack travel mm : -0.15  
Tolerance mm :  $\pm$  0.05

**Start interlock**

Rated speed rpm : > 100  
Rated speed rpm : < 195

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 215

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 628

Injection pump  
Pump designation : PES6P120A320RS7359  
EP type number : 0 412 726 966

Governor  
Governor design. : RQ300/1050PA999-7  
Governor no. : 0 421 801 799

Cust. part No. : CCEP 5162 66-246

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIHR062045 C41  
Power KW : 217.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : - 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.75  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 20.25  
Tolerance mm : + 0.75

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

## Start of delivery mark

\*NW after s.o.d. : -0.45  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

Barrel no. : 1

## CRT ZERO POSITION

Rack travel in mm : 13.00  
Tolerance mm : + 0.05

## BASIC SETTING

Rated speed rpm : 600

Tolerance mm : + 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 275.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Speed  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 Rated speed rpm : 275  
 Rack travel in mm : -6.60  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 30.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 5.0  
 Speed  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1117  
 guide sleeve travel mm : 6.54  
 Tolerance mm : + 0.15  
 Rated speed rpm : 275  
 guide sleeve travel mm : 2.18  
 Tolerance mm : + 0.20  
 Rated speed rpm : 1050  
 guide sleeve travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 536  
 guide sleeve travel mm : 5.00  
 Tolerance mm : + 0.10  
 Rated speed rpm : 680  
 guide sleeve travel mm : 6.00  
 Tolerance mm : + 0.10  
 Rated speed rpm : 1360  
 guide sleeve travel mm : 11.50  
 Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

control lever position degree : 109  
 Rated speed rpm : 800  
 Rack travel in mm : 20.00  
 Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 275.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Speed  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever position degree : 274.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : -1.00  
 Rated speed rpm : 1110  
 Tolerance 1/min : + 5  
 rack travel mm : -9.00  
 Rated speed rpm : 1260  
 Tolerance 1/min : + 15

rack travel mm : -12.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1375

---

#### LOW IDLE

control lever position degree : 253.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : -6.60  
Tolerance mm : + 0.10

rack travel mm : -11.00  
Rated speed rpm : 520  
Tolerance 1/min : + 20

Rated speed rpm : 175  
CRT mm min. : < -4.30

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -2.20  
Tolerance mm : + 0.20

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 360  
rack travel mm : -0.45  
Tolerance mm : + 0.15

Pressure hPa : 200  
rack travel mm : -1.45  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 195

Check speed 1/min : > 80  
Check speed 1/min : < 215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 1050  
Del. quantity cm<sup>3</sup>/1000 strokes : 285.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 143.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance cm<sup>3</sup>/1000S. : + 19.0

#### LOW IDLE

Rated speed rpm : 275  
Del. quantity cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance : + - 5.0  
cm<sup>3</sup>/1000S.  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 07.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 631

Injection pump  
Pump designation : PES6P130A320RS7414  
EP type number : 0 412 736 810

Governor  
Governor design. : RQV450...1500PA1049  
Governor no. : 0 421 814 032

Cust. part No. :

---

Customer-spec. information  
Customer : SEATEK  
Motor : 64/V9  
Power KW : 640.0

---

### TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 073

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.45  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

### Start of delivery blocking

Check tolerance °NW : + 0.40

Barrel no. : 1

---

### BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 13.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 320.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 4.40

Tolerance mm : + 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 23.0

Tolerance cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1565

guide sleeve

travel mm : 8.24

Tolerance mm : + 0.15

Rated speed rpm : 450

guide sleeve

travel mm : 0.99

Tolerance mm : + 0.20

Rated speed rpm : 1065

guide sleeve

travel mm : 4.84

Tolerance mm : + 0.25

Rated speed rpm : 690

guide sleeve

travel mm : 2.93

Tolerance mm : + 0.25

Rated speed rpm : 1880

guide sleeve

travel mm : 11.50

Tolerance mm : + 0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500

Aneroid pressure

hPa : 1000

Del. quantity

cm<sup>3</sup>/1000 strokes : 320.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever position degree : 106.0

tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 12.50

Rated speed rpm : 1545

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1695

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1800

##### LOW IDLE

control lever position degree : 71.0

tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 450

rack travel mm : 4.40

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 520

Tolerance 1/min : + 20

Rated speed rpm : 350  
CRT mm min. : > 6.00

---

#### TORQUE CONTROL

Rated speed rpm : 1500  
rack travel mm : 13.55  
Tolerance mm : + - 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.50  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.20  
Tolerance mm : + - 0.20

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 185  
rack travel mm : 10.80  
Tolerance mm : + - 0.30

Pressure hPa : 300  
rack travel mm : 12.50  
Tolerance mm : + - 0.05

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 140.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 5.0

Rated speed rpm : 100

---

#### LOW IDLE

Rated speed rpm : 450  
Del. quantity  
cm3/1000 strokes : 23.0  
Tolerance  
cm3/1000 strokes : + - 3.0  
Check tolerance  
cm3/1000S. : + - 6.0  
Spread  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

End of test specification sheet

---

#### STARTING FUEL DELIVERY

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 11.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 650

Injection pump  
Pump designation : PES6P120A320RS7344  
EP type number : 0 412 726 914

Governor  
Governor design. : RQ275/1050PA999-6  
Governor no. : 0 421 801 785

Cust. part No. : CCEP 5151A 66-230

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 062045 M41  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity  
min. l/h : 145  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.50  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

## Start of delivery mark

\*NW after s.o.d. : -0.15  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference  
betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 11.00  
Difference ° CS : 2.25

---

#### CRT ZERO POSITION

Rack travel in mm : 11.50  
Tolerance mm : + 0.05

---

#### BASIC SETTING

Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : -6.90  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1132  
guide sleeve  
travel mm : 6.37  
Tolerance mm : + 0.10

---

Rated speed rpm : 275  
guide sleeve  
travel mm : 0.80  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 416  
guide sleeve  
travel mm : 3.44  
Tolerance mm : + 0.10

Rated speed rpm : 560  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1350  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure

hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 274.0

tolerance degree : + - 4.0

RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1135  
Tolerance 1/min : + - 5

rack travel mm : -7.50  
Rated speed rpm : 1240  
Tolerance 1/min : + - 15

rack travel mm : -11.00  
Tolerance mm : + - 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 251.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -6.90  
Tolerance mm : + - 0.10

rack travel mm : -9.50  
Rated speed rpm : 365  
Tolerance 1/min : + - 20

Rated speed rpm : 200

CRT mm min. : < -5.70

---

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1050  
Tolerance mm : + - 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -3.55

Tolerance mm : + - 0.30

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 560  
rack travel mm : -1.15  
Tolerance mm : + - 0.15

Pressure hPa : 320  
rack travel mm : -2.65  
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 225

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 245

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 278.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

---

**LOW IDLE**

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 994

Injection pump  
Pump designation : PES6F 20A320RS7344  
EP type number : 0 412 725 914

Governor  
Governor design. : RQV275...1000PA1161  
Governor no. : 0 421 814 100

Cust. part No. : CCEP 5143A 66-231

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 062045 E/41  
Power KW : 249.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.50  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

## Start of delivery mark

\*NW after s.c.d. : -0.15  
Tolerance : + 0.50  
Check  
tolerance \*NW : + 0.75

Barrel no. : 1

## Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 11.00  
Difference ° CS : 2.25

## CRT ZERO POSITION

Rack travel in mm : 12.60  
Tolerance mm : + 0.05

#### BASIC SETTING

Rated speed rpm : 600

Del. quantity cm<sup>3</sup>/1000 strokes : 282.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Del. quantity cm<sup>3</sup>/1000 strokes : 30.0

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance cm<sup>3</sup>/1000S. : + 5.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1086

guide sleeve

travel mm : 8.09

Tolerance mm : + 0.25

Rated speed rpm : 300

guide sleeve

travel mm : 1.66

Tolerance mm : + 0.25

Rated speed rpm : 793

guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.25

Rated speed rpm : 343  
guide sleeve  
travel mm : 2.33  
Tolerance mm : + 0.25

Rated speed rpm : 393  
guide sleeve  
travel mm : 2.95  
Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.72  
Tolerance mm : + 0.25

Rated speed rpm : 1410  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1235

Rack travel in mm : 11.70  
Tolerance mm : + 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure

hPa : 1000

Del. quantity cm<sup>3</sup>/1000 strokes : 282.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 120.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1075  
Tolerance 1/min : + - 5

rack travel mm : -8.60  
Rated speed rpm : 1210  
Tolerance 1/min : + - 15

rack travel mm : -12.10  
Tolerance mm : + - 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 200  
CRT mm max. : < -5.60  
Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Rated speed rpm : 1000  
Tolerance mm : + - 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -3.35  
Tolerance mm : + - 0.30

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 320

rack travel mm : -2.65  
Tolerance mm : + - 0.15

Pressure hPa : 640  
rack travel mm : -0.70  
Tolerance mm : + - 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 225

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm3/1000 strokes : 281.0  
Tolerance  
cm3/1000 strokes : + - 3.0  
Check tolerance  
cm3/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 123.0  
Tolerance  
cm3/1000 strokes : + - 1.0  
Check tolerance  
cm3/1000S. : + - 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity  
cm3/1000 strokes : 150.0  
Tolerance  
cm3/1000 strokes : + - 15.0  
Check tolerance  
cm3/1000S. : + - 19.0

---

#### LOW IDLE

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.03.97  
Test oil : ISO 4113

Combination No. : 0 402 746 995

Injection pump  
Pump designation : PES6P120A320RS7343  
EP type number : 0 412 726 915

Governor  
Governor design. : RQV300...1000PA1160K  
Governor no. : 0 421 815 420

Cust. part No. : CCEP 5144A 66-232

### Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 062356 A/41  
Power KW : 280.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.50  
Tolerance mm : + 0.65  
Check  
tolerance mm : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance \*NW : + 0.50

### Start of delivery mark

\*NW after s.o.d. : -0.15  
Tolerance : + 0.50  
Check  
tolerance \*NW : + 0.75

Barrel no. : 1

### Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 11.00  
Difference \* CS : 2.25

### CRT ZERO POSITION

Rack travel in mm : 12.80  
Tolerance mm : + - 0.05

#### BASIC SETTING

Rated speed rpm : 1000

Del. quantity cm<sup>3</sup>/1000 strokes : 350.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.70  
Tolerance mm : + - 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 36.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance cm<sup>3</sup>/1000S. : + - 5.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1103

guide sleeve travel mm : 8.70  
Tolerance mm : + - 0.25

Rated speed rpm : 300  
guide sleeve travel mm : 1.32  
Tolerance mm : + - 0.25

Rated speed rpm : 823  
guide sleeve travel mm : 5.92  
Tolerance mm : + - 0.25

Rated speed rpm : 405  
guide sleeve travel mm : 2.43  
Tolerance mm : + - 0.25

Rated speed rpm : 455  
guide sleeve travel mm : 2.98  
Tolerance mm : + - 0.25

Rated speed rpm : 550  
guide sleeve travel mm : 3.66  
Tolerance mm : + - 0.25

Rated speed rpm : 1440  
guide sleeve travel mm : 13.50  
Tolerance mm : + - 0.50

#### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1300

Rack travel in mm : 11.60  
Tolerance mm : + - 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure hPa : 1200

Del. quantity cm<sup>3</sup>/1000 strokes : 350.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 117.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1100  
Tolerance 1/min : + - 5

rack travel mm : -8.80  
Rated speed rpm : 1210  
Tolerance 1/min : + - 15

rack travel mm : -12.30  
Tolerance mm : + - 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : -7.70  
Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm max. : < -6.70

Rated speed rpm : 390

---

#### TORQUE CONTROL

Rated speed rpm : 1000

Rated speed rpm : 600  
rack travel mm : -0.45  
Tolerance mm : + - 0.15

Rated speed rpm : 800  
rack travel mm : 0.10  
Tolerance mm : + - 0.15

Rated speed rpm : 350  
rack travel mm : -1.70  
Tolerance mm : + - 0.30

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1200

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : -3.90  
Tolerance mm : + - 0.30

##### MEASUREMENT

Rated speed rpm : 1000  
Pressure hPa : 320  
rack travel mm : -2.80  
Tolerance mm : + - 0.15

Pressure hPa : 520  
rack travel mm : -1.70  
Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 225

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 381.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + - 0.75  
Del. quantity cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity cm<sup>3</sup>/1000 strokes : 36.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 010

Injection pump  
Pump designation : PES6P120A320RS8028  
EP type number : 0 412 926 021

Governor  
Governor design. : RQV275...1175PA1101K  
Governor no. : 0 421 815 982

Cust. part No. : CCEP 5133 A 66-193

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 060226 M51  
Power KW : 158.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 13.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

## Start of delivery mark

\*NW after s.o.d. : -0.15

Tolerance : + 0.50

Check  
tolerance °NW : + 0.75

Barrel no. : 1

## Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 12.30  
Difference ° CS : 2.00

## CRT ZERO POSITION

Rack travel in mm : 13.70  
Tolerance mm : + - 0.05

#### BASIC SETTING

Rated speed rpm : 1175

Del. quantity cm<sup>3</sup>/1000 strokes : 268.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.30  
Tolerance mm : + - 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 42.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance cm<sup>3</sup>/1000S. : + - 6.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1230  
guide sleeve travel mm : 8.95  
Tolerance mm : + - 0.10

Rated speed rpm : 275  
guide sleeve travel mm : 1.01  
Tolerance mm : + - 0.10

Rated speed rpm : 877  
guide sleeve travel mm : 6.51  
Tolerance mm : + - 0.20

Rated speed rpm : 389  
guide sleeve travel mm : 2.39  
Tolerance mm : + - 0.20

Rated speed rpm : 439  
guide sleeve travel mm : 3.01  
Tolerance mm : + - 0.20

Rated speed rpm : 550  
guide sleeve travel mm : 3.92  
Tolerance mm : + - 0.20

Rated speed rpm : 1650  
guide sleeve travel mm : 13.50  
Tolerance mm : + - 0.50

#### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1430

Rack travel in mm : 11.20  
Tolerance mm : + - 2.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175  
Aneroid pressure hPa : 1600  
Del. quantity cm<sup>3</sup>/1000 strokes : 268.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 295.0  
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1250  
Tolerance 1/min : + - 15

rack travel mm : -9.70  
Rated speed rpm : 1430  
Tolerance 1/min : + - 5

rack travel mm : -13.20  
Tolerance mm : + - 0.55  
Rated speed rpm : 1550

---

LOW IDLE

control lever  
position degree : 245.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -7.30  
Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm max. : < -6.40

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 650  
rack travel mm : -1.55  
Tolerance mm : + - 0.10

Rated speed rpm : 350  
rack travel mm : -2.80  
Tolerance mm : + - 0.25

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1175  
Pressure hPa : 1600

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -5.40  
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1175

Pressure hPa : 320  
rack travel mm : -4.70  
Tolerance mm : + - 0.20

Pressure hPa : 560  
rack travel mm : -2.95  
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 175  
Rated speed rpm : < 240

Check  
speed 1/min : > 155  
Check  
speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 011

Injection pump  
Pump designation : PES6P120A320RS8028  
EP type number : 0 412 926 021

Governor  
Governor design. : RQV275...1250PA1125K  
Governor no. : 0 421 815 981

Cust. part No. : CCEP 5140A 66-205

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 06.02.26L51  
Power KW : 132.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : + - 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 5.00  
Tolerance mm : + - 0.05  
Check  
tolerance mm : + - 0.10

Rack travel in mm : 11.00  
Tolerance mm : + - 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + - 0.30  
Check  
tolerance \*NW : + - 0.50

## Start of delivery mark

\*NW after s.o.d. : -0.25  
Tolerance : + - 0.50  
Check  
tolerance \*NW : + - 0.75

Barrel no. : 1

Beginning of delivery difference  
betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 10.00  
Difference \* CS : 2.25

## CRT ZERO POSITION

Rack travel in mm : 12.60  
Tolerance mm :  $\pm$  0.05

#### BASIC SETTING

Rated speed rpm : 1250

Rated speed rpm : 325

Rack travel in mm : -6.60  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1355  
guide sleeve  
travel mm : 10.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.00  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 929  
guide sleeve  
travel mm : 6.80  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 390  
guide sleeve  
travel mm : 2.39  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 440  
guide sleeve  
travel mm : 3.01  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 550

guide sleeve  
travel mm : 3.92  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1430

Rack travel in mm : 10.90  
Tolerance mm :  $\pm$  2.00

#### CONTROL LEVER

control lever  
position degree : 296.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1330  
Tolerance 1/min :  $\pm$  15

rack travel mm : -8.60  
Rated speed rpm : 1470  
Tolerance 1/min :  $\pm$  5

rack travel mm : -12.10  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1600

#### LOW IDLE

control lever  
position degree : 244.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : -6.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm max. : < -5.20

Rated speed rpm : 360

#### TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 650  
rack travel mm : -1.10  
Tolerance mm : + 0.10

Rated speed rpm : 350  
rack travel mm : -1.70  
Tolerance mm : + 0.25

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1600  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -4.30  
Tolerance mm : + 0.20

##### MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 200  
rack travel mm : -3.70  
Tolerance mm : + 0.20

Pressure hPa : 360  
rack travel mm : -2.60  
Tolerance mm : + 0.05

##### Start interlock

Rated speed rpm : > 175  
Rated speed rpm : < 240

Check speed 1/min : > 155  
Check speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 650

Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 012

Injection pump  
Pump designation : PES6P120A320RS8031  
EP type number : 0 412 926 022

Governor  
Governer design. : RQV300...1000PA1181K  
Governer no. : 0 421 815 975

Cust. part No. : CCEP 5145A 66-234

### Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 063540 P 41  
Power KW : 300.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + - 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 3.65  
Tolerance mm : + - 0.05  
Check  
tolerance mm : + - 0.10

Rack travel in mm : 11.00  
Tolerance mm : + - 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + - 0.30  
Check  
tolerance °NW : + - 0.50

Start of delivery mark

\*NW after s.o.d. : -0.17  
Tolerance : + - 0.50  
Check  
tolerance \*NW : + - 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 19.50  
Difference ° CS : 2.50

### CRT ZERO POSITION

Rack travel in mm : 13.30  
Tolerance mm : + - 0.05

#### BASIC SETTING

Rated speed rpm : 1000

Del. quantity cm<sup>3</sup>/1000 strokes : 360.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -7.80  
Tolerance mm : + - 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 38.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance cm<sup>3</sup>/1000S. : + - 6.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1082  
guide sleeve travel mm : 9.30  
Tolerance mm : + - 0.25

Rated speed rpm : 300  
guide sleeve travel mm : 1.47

Tolerance mm : + - 0.25

Rated speed rpm : 797  
guide sleeve travel mm : 6.08  
Tolerance mm : + - 0.25

Rated speed rpm : 383  
guide sleeve travel mm : 2.42  
Tolerance mm : + - 0.25

Rated speed rpm : 433  
guide sleeve travel mm : 2.89  
Tolerance mm : + - 0.25

Rated speed rpm : 530  
guide sleeve travel mm : 3.71  
Tolerance mm : + - 0.25

Rated speed rpm : 1350  
guide sleeve travel mm : 13.50  
Tolerance mm : + - 0.50

#### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1220

Rack travel in mm : 12.00  
Tolerance mm : + - 2.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure hPa : 1400

Del. quantity cm<sup>3</sup>/1000 strokes : 360.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 295.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1110  
Tolerance 1/min : + - 5

rack travel mm : -9.30  
Rated speed rpm : 1210  
Tolerance 1/min : + - 15

rack travel mm : -12.80  
Tolerance mm : + - 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 253.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : -7.80  
Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm max. : < -6.00

Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 1000

Rated speed rpm : 600  
rack travel mm : -0.55  
Tolerance mm : + - 0.10

Rated speed rpm : 800  
rack travel mm : -0.35  
Tolerance mm : + - 0.20

Rated speed rpm : 350  
rack travel mm : -1.80  
Tolerance mm : + - 0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1400  
Tolerance mm : + - 0.10

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : -5.50  
Tolerance mm : + - 0.20

##### MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 280  
rack travel mm : -4.50  
Tolerance mm : + - 0.20

Pressure hPa : 560  
rack travel mm : -3.00  
Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 175  
Rated speed rpm : < 240

Check  
speed 1/min : > 155  
Check  
speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1400  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 390.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 325  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 013

Injection pump  
Pump designation : PES6P120A320RS8028  
EP type number : 0 412 926 021

Governor  
Governor design. : RQV275...1250PA1189K  
Governor no. : 0 421 815 974

Cust. part No. : CCEP 5146A 66-220

### Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 06.02.26Y41  
Power KW : 184.0

### TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.00  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

### Start of delivery mark

\*NW after s.o.d. : -0.25  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

Barrel no. : 1

### Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 11.00  
Difference ° CS : 2.25

### CRT ZERO POSITION

Rack travel in mm : 14.50  
Tolerance mm : + 0.05

#### BASIC SETTING

Rated speed rpm : 1250

Del. quantity cm<sup>3</sup>/1000 strokes : 279.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.70  
Tolerance mm : + 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 45.0

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1332  
guide sleeve travel mm : 10.07  
Tolerance mm : + 0.25

Rated speed rpm : 275  
guide sleeve travel mm : 1.10

Tolerance mm : + 0.25

Rated speed rpm : 912  
guide sleeve travel mm : 6.79  
Tolerance mm : + 0.25

Rated speed rpm : 412  
guide sleeve travel mm : 2.53  
Tolerance mm : + 0.25

Rated speed rpm : 462  
guide sleeve travel mm : 3.16  
Tolerance mm : + 0.25

Rated speed rpm : 550  
guide sleeve travel mm : 3.97  
Tolerance mm : + 0.25

Rated speed rpm : 1630  
guide sleeve travel mm : 13.50  
Tolerance mm : + 0.50

#### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1420

Rack travel in mm : 13.50  
Tolerance mm : + 1.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure hPa : 1600  
Del. quantity cm<sup>3</sup>/1000 strokes : 279.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 303.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1325  
Tolerance 1/min :  $\pm$  15

rack travel mm : -10.40  
Rated speed rpm : 1480  
Tolerance 1/min :  $\pm$  5

rack travel mm : -13.90  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1600

---

#### LOW IDLE

control lever  
position degree : 250.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : -7.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm max. : < -6.90

Rated speed rpm : 380

---

#### TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 800  
rack travel mm : -0.85  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -4.10  
Tolerance mm :  $\pm$  0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

C01

Rated speed rpm : 1250  
Pressure hPa : 1600  
Tolerance mm :  $\pm$  0.10

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : -4.40  
Tolerance mm :  $\pm$  0.20

#### MEASUREMENT

Rated speed rpm : 1250  
Pressure hPa : 240  
rack travel mm : -3.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 480  
rack travel mm : -1.60  
Tolerance mm :  $\pm$  0.05

#### Start interlock

Rated speed rpm : > 175  
Rated speed rpm : < 240

Check  
speed 1/min : > 155  
Check  
speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 19.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 45.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 027

Injection pump  
Pump designation : PES6P120A320RS8047  
EP type number : 0 412 926 029

Governor  
Governor design. : RQV275...1250PA1312K  
Governor no. : 0 421 815 966

Cust. part No. : CCEP 5160 66-244

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 06.02.26L71  
Power KW : 132.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Overflow quantity  
min. l/h : 145  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.00  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

## Start of delivery mark

\*NW after s.o.d. : -0.25  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference  
betw. rack trav.

mm : 21.00  
and maximum rack travel : 11.00  
Difference ° CS : 3.25

---

**CRT ZERO POSITION**

Rack travel in mm : 12.10  
Tolerance mm :  $\pm$  0.05

---

**BASIC SETTING**

Rated speed rpm : 1250

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spred

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

---

Rack travel in mm : -7.50  
Tolerance mm :  $\pm$  0.10

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Spred

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

**(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR**

---

**GUIDE SLEEVE TRAVEL**

Rated speed rpm : 1340  
guide sleeve  
travel mm : 9.96  
Tolerance mm :  $\pm$  0.15

---

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.52  
Tolerance mm :  $\pm$  0.20

---

Rated speed rpm : 923  
guide sleeve  
travel mm : 6.76  
Tolerance mm :  $\pm$  0.25

---

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.92  
Tolerance mm :  $\pm$  0.25

---

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

**GUIDE SLEEVE POSITION**

control lever  
position degree : - 1  
Rated speed rpm : 1430

---

Rack travel in mm : 11.10  
Tolerance mm :  $\pm$  2.70

---

**FULL LOAD DELIVERY AT FULL LOAD STOP**

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

**CONTROL LEVER**

control lever  
position degree : 296.0  
tolerance degree :  $\pm$  4.0

---

RATED SPEED  
rack travel mm : -1.00  
Rated speed rpm : 1325

---

Tolerance 1/min : + 15  
 rack travel mm : -8.10  
 Rated speed rpm : 1465  
 Tolerance 1/min : + 5  
 rack travel mm : -11.60  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1600

---

#### LOW IDLE

control lever position degree : 241.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 325  
 rack travel mm : -7.50  
 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : < -6.10

Rated speed rpm : 325  
 rack travel mm : > 6.10

---

#### TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 650  
 rack travel mm : -2.10  
 Tolerance mm : + 0.10

Rated speed rpm : 350  
 rack travel mm : -3.25  
 Tolerance mm : + 0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1250  
 Pressure hPa : 1600  
 Tolerance mm : + 0.10

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : -4.60

Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 250  
 rack travel mm : -3.70  
 Tolerance mm : + 0.20

Pressure hPa : 700  
 rack travel mm : -0.60  
 Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 175  
 Rated speed rpm : < 240

Check speed 1/min : > 155  
 Check speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1600  
 Rated speed rpm : 650  
 Del. quantity cm<sup>3</sup>/1000 strokes : 174.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 124.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity cm<sup>3</sup>/1000 strokes : 113.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 10.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 325

Del. quantity

cm<sup>3</sup>/1000 strokes : 33.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance

cm<sup>3</sup>/1000S. : + 6.0

Spred

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance

cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 10.03.97  
Test oil : ISO 4113

Combination No. : 0 402 946 028

Injection pump  
Pump designation : PES6P120A320RS8047  
EP type number : 0 412 926 029

Governor  
Governor design. : RQV275...1175PA1312  
: 1K  
Governor no. : 0 421 815 965

Cust. part No. : CCEP 5161 66-245

## Customer-spec. information

Customer : RENAULT V.I.  
Motor : MIDR 060226 M71  
Power KW : 158.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.00  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 11.00  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check tolerance °NW : + 0.50

## Start of delivery mark

\*NW after s.o.d. : -0.25  
Tolerance : + 0.50

Check tolerance \*NW : + 0.75

Barrel no. : 1

## Beginning of delivery difference

betw. rack trav.  
mm : 21.00  
and maximum rack  
travel : 11.00  
Difference ° CS : 3.25

---

#### CRT ZERO POSITION

Rack travel in mm : 13.30  
Tolerance mm :  $\pm$  0.05

---

#### BASIC SETTING

Rated speed rpm : 1175

Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : -7.20  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1270  
guide sleeve  
travel mm : 9.30  
Tolerance mm :  $\pm$  0.15

---

Rated speed rpm : 275  
guide sleeve  
travel mm : 0.98  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 893  
guide sleeve  
travel mm : 6.60  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 4.01  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : -1  
Rated speed rpm : 1420

Rack travel in mm : 12.20  
Tolerance mm :  $\pm$  2.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175  
Aneroid pressure  
hPa : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 294.0  
tolerance degree :  $\pm$  4.0

RATED SPEED  
rack travel mm : -1.00

Rated speed rpm : 1255  
Tolerance 1/min : + - 15

rack travel mm : -9.20  
Rated speed rpm : 1431  
Tolerance 1/min : + - 5

rack travel mm : -12.85  
Tolerance mm : + - 0.50  
Rated speed rpm : 1550

---

#### LOW IDLE

control lever  
position degree : 243.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : -7.20  
Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm max. : > -6.50

Rated speed rpm : 390

---

#### TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 650  
rack travel mm : -1.75  
Tolerance mm : + - 0.10

Rated speed rpm : 350  
rack travel mm : -3.00  
Tolerance mm : + - 0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1175  
Pressure hPa : 1600  
  
Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -5.60  
Tolerance mm : + - 0.20

#### MEASUREMENT

Rated speed rpm : 1175  
Pressure hPa : 320  
rack travel mm : -4.00  
Tolerance mm : + - 0.20

Pressure hPa : 560  
rack travel mm : -2.40  
Tolerance mm : + - 0.05

#### Start interlock

Rated speed rpm : > 175  
Rated speed rpm : < 240  
  
Check  
speed 1/min : > 155  
Check  
speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

LOW IDLE

Rated speed rpm : 275  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 422

Injection pump  
Pump designation : PES3A80D320/3RS1264  
EP type number : 9 400 083 053

Governor  
Governor design. : RSV350...1200A2C627R  
Governor no. : 9 420 083 288

Cust. part No. :

---

Customer-spec. information  
Customer : MWM  
Motor : D225-3

---

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 6.00  
Tolerance mm : + - 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + - 0.35

governor spring  
pre-tension  
click setting x : 4.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure

hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + - 2.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

##### CONTROL LEVER

control lever  
position degree : 50.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : 8.40  
Rated speed rpm : 1245  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1300  
Tolerance 1/min : + - 15

rack travel mm : 0.35  
Tolerance mm : + - 0.55  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 20.0  
tolerance degree : + - 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : + - 0.10

##### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 520  
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 9.45  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 9.50  
Tolerance mm : + - 0.10

Rated speed rpm : 400  
rack travel mm : 10.90  
Tolerance mm : + - 0.30

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 423

Injection pump  
Pump designation : PES3A80D320/3RS1264  
EP type number : 9 400 083 053

Governor  
Governor design. : RSV350...900A7C627R  
Governor no. : 9 420 083 264

Cust. part No. :

---

Customer-spec. information  
Customer : MWM  
Motor : D225-3

---

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

Rated speed rpm : 350  
 Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35  
 governor spring  
 pre-tension  
 click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 52.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 2.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

##### CONTROL LEVER

control lever  
 position degree : 111.0  
 tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1100

##### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 940  
 rack travel mm : 9.20

Rated speed rpm : 969  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 941  
 rack travel mm : 9.20

Rated speed rpm : 970  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 942  
 rack travel mm : 9.20

Rated speed rpm : 971  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 943  
 rack travel mm : 9.20

Rated speed rpm : 972  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 944  
 rack travel mm : 9.20

Rated speed rpm : 973  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

Rated speed rpm : 945

rack travel mm	:	9.20	Tolerance mm	:	± 1.00
Rated speed rpm	:	974			
Tolerance 1/min	:	± 4			
rack travel mm	:	4.00			

---

#### LOW IDLE

control lever		
position degree	:	79.0
tolerance degree	:	± 4.0
Setting point w/out bumper spring		
Rated speed rpm	:	350
rack travel mm	:	5.50
Tolerance mm	:	± 0.10

#### Testing:

Rated speed rpm	:	350
rack travel mm	:	6.00
Tolerance mm	:	± 0.10
rack travel mm	:	2.00
Rated speed rpm	:	450
Tolerance 1/min	:	± 30
Rated speed rpm	:	100
CRT mm min.	:	> 19.00

---

#### TORQUE CONTROL

Rated speed rpm	:	900
rack travel mm	:	10.25
Tolerance mm	:	± 0.05
Rated speed rpm	:	500
rack travel mm	:	10.30
Tolerance mm	:	± 0.10
Rated speed rpm	:	400
rack travel mm	:	11.20
Tolerance mm	:	± 0.30

#### Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	20.00

---

#### LOW IDLE

Rated speed rpm	:	350
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	9.5
Tolerance		
cm <sup>3</sup> /1000 strokes	:	± 1.5
Check tolerance		
cm <sup>3</sup> /1000S.	:	± 3.5
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	4.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 426

Injection pump  
Pump designation : PES4A80D320/3RS1265  
EP type number : 9 400 083 055

Governor  
Governor design. : RSV350...1200A2C627R  
Governor no. : 9 420 083 288

Cust. part No. :

---

Customer-spec. information  
Customer : MWM  
Motor : D225-4

---

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

---

Rated speed rpm : 350  
 Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring  
 pre-tension  
 click setting x : 4.75

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 51.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 2.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

---

##### CONTROL LEVER

control lever  
 position degree : 101.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 8.40  
 Rated speed rpm : 1245  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1300  
 Tolerance 1/min : + 15  
 rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1450

##### LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 5.50  
 Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 6.00  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 500  
 Tolerance 1/min : + 30

Rated speed rpm : 100  
 CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1200  
 rack travel mm : 9.45  
 Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 9.50  
Tolerance mm : + - 0.10

Rated speed rpm : 400  
rack travel mm : 10.90  
Tolerance mm : + - 0.30

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 427

Injection pump  
Pump designation : PES4A80D320/3RS1265  
EP type number : 9 400 083 055

Governor  
Governor design. : RSV350...900A7C627R  
Governor no. : 9 420 083 264

Cust. part No. :

---

Customer-spec. information  
Customer : MWM  
Motor : D225-4

---

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + - 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 2.25  
Tolerance mm : + - 0.05  
Check  
tolerance mm : + - 0.10

Rack travel in mm : 10.50  
Tolerance mm : + - 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + - 1.50  
Difference ° CS : 4.50

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.25  
Tolerance mm : + - 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + - 2.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

---

Rated speed rpm : 350  
 Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring  
 pre-tension  
 click setting x : 6.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 52.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 2.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

---

#### CONTROL LEVER

control lever  
 position degree : 111.0  
 tolerance degree : + 4.0

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm	:	940
rack travel mm	:	9.20
Rated speed rpm	:	969
Tolerance 1/min	:	+ 4
rack travel mm	:	4.00
rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1100

Rated speed rpm	:	941
rack travel mm	:	9.20

Rated speed rpm	:	970
Tolerance 1/min	:	+ 4
rack travel mm	:	4.00

rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1100

Rated speed rpm	:	942
rack travel mm	:	9.20

Rated speed rpm	:	971
Tolerance 1/min	:	+ 4
rack travel mm	:	4.00

rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1100

Rated speed rpm	:	943
rack travel mm	:	9.20

Rated speed rpm	:	972
Tolerance 1/min	:	+ 4
rack travel mm	:	4.00

rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1100

Rated speed rpm : 944  
rack travel mm : 9.20

Rated speed rpm : 973  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

Rated speed rpm : 945  
rack travel mm : 9.20

Rated speed rpm : 974  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

#### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 450  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 10.25  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 10.30  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 11.20  
Tolerance mm : + 0.30

Start interlock

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 429

Injection pump  
Pump designation : PES6A80D320/3RS1261  
EP type number : 9 400 083 057

Governor  
Governor design. : RSV350...900A7C627R  
Governor no. : 9 420 083 264

Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : D225-6

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.25  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 52.0

Tolerance  
cm³/1000 strokes : + 0.5

Check tolerance  
cm³/1000S. : + 2.0

Spread \_\_\_\_\_

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

---

Rated speed rpm : 350

Rack travel in mm : 6.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 6.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure

hPa : -  
Del. quantity

cm<sup>3</sup>/1000 strokes : 52.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance

cm<sup>3</sup>/1000S. : + 2.0  
Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

---

#### CONTROL LEVER

control lever  
position degree : 111.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 940  
rack travel mm : 9.20

Rated speed rpm : 969  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

Rated speed rpm : 941  
rack travel mm : 9.20

Rated speed rpm : 970  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

Rated speed rpm : 942  
rack travel mm : 9.20

Rated speed rpm : 971  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 943  
rack travel mm : 9.20

Rated speed rpm : 972  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + - 0.55

Rated speed rpm : 944  
rack travel mm : 9.20

Rated speed rpm : 973  
Tolerance 1/min : + - 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + - 0.55

Rated speed rpm : 945  
rack travel mm : 9.20

Rated speed rpm : 974  
Tolerance 1/min : + - 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + - 0.55

#### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : + - 4.0

Setting point: w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : + - 0.10

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 450  
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 10.25  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 10.30  
Tolerance mm : + - 0.10

Rated speed rpm : 400  
rack travel mm : 11.20  
Tolerance mm : + - 0.30

Start interlock

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 430

Injection pump  
Pump designation : PES6A80D320/3RS1261  
EP type number : 9 400 083 057

Governor  
Governor design. : RSV350...1200A2C627R  
Governor no. : 9 420 083 288

Cust. part No. :

---

Customer-spec. information  
Customer : MWM  
Motor : D225-6

---

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.45  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 51.0

Tolerance  
cm³/1000 strokes : + 0.5

Check tolerance  
cm³/1000s. : + 2.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 6.00  
Tolerance mm : + 0.10

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65

governor spring  
pre-tension  
click setting x : 4.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

##### CONTROL LEVER

control lever  
position degree : 50.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 8.40  
Rated speed rpm : 1245  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1300  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 20.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 520  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 9.45  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 9.50  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 10.90  
Tolerance mm : + 0.30

##### Start interlock

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00

---

LOW IDLE

Rated speed rpm : 350

---

End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 449

Injection pump  
Pump designation : PES6A100D320/3RS2691  
EP type number : 9 410 230 025

Governor  
Governor design. : RSV400...1100A2C2209  
: R  
Governor no. : 9 420 083 201

Cust. part No. : 3352891

**Customer-spec. information**

Customer : CUMMINS  
Motor : 6 CT 8.3 L

**TEST BENCH REQUIREMENTS**

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

**Start of delivery blocking**

\*NW after s.o.d. : 11.00  
Tolerance : + 0.10  
Check  
tolerance \*NW : + 0.23

Barrel no. : 1

**Beginning of delivery difference**

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

**BASIC SETTING**

Rated speed rpm : 1100

Rack travel in mm : 10.15

Tolerance mm : + 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 88.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000s. : + 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000s. : 8.0  
  
 Rated speed rpm : 450  
 Rack travel in mm : 5.10  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 12.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000s. : + 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000s. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + 0.20  
 governor spring  
 pre-tension  
 click setting x : 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 88.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000s. : + 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000s. : 8.0

##### CONTROL LEVER

control lever  
 position degree : 89.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 9.10  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1185  
 Tolerance 1/min : + 15  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
 position degree : 67.0  
 tolerance degree : + 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 450  
 rack travel mm : 4.60  
 Tolerance mm : + 0.10  
 Testing:  
 Rated speed rpm : 450  
 rack travel mm : 5.10  
 Tolerance mm : + 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 585

Tolerance 1/min : + 30  
Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 10.15  
Tolerance mm : + 0.05

Rated speed rpm : 550  
rack travel mm : 10.20  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 10.75  
Tolerance mm : + 0.25

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 11.0

---

#### LOW IDLE

Rated speed rpm : 450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 451

Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -2  
EP type number : 9 410 230 028

Governor  
Governor design. : RQV350...1100AB1218R  
Governor no. : 9 420 080 214

Cust. part No. :

### Customer-spec. information

Customer : CUMMINS  
Motor : 6 CT/8.3 1  
Power KW : 157.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.65  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 118.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000s. : + 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 350  
Rack travel in mm : 5.90  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 800  
guide sleeve  
travel mm : 5.75  
Tolerance mm : + 0.15  
Rated speed rpm : 1100  
guide sleeve  
travel mm : 8.45  
Tolerance mm : + 0.05

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.40  
Tolerance mm : + 0.20

Rated speed rpm : 500  
guide sleeve  
travel mm : 4.05  
Tolerance mm : + 0.15

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1

Rated speed rpm : 1090  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
position degree : 63.0  
tolerance degree : + 4.0  
control lever  
position degree : 118.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 11.60  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1255  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1370

##### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + 4.0  
control lever  
position degree : 15.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.90  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.65  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 13.65  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 13.40  
Tolerance mm : + 0.10

Rated speed rpm : 950  
rack travel mm : 12.95  
Tolerance mm : + 0.15

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 13.65  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 500  
rack travel mm : 0.40  
Tolerance mm : + 0.10

Pressure hPa : 600  
rack travel mm : 1.35  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 94.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 11.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 452

Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -2  
EP type number : 9 410 230 028

Governor  
Governer design. : RQV350...1250AB1225R  
Governer no. : 9 420 080 224

Cust. part No. :

## Customer-spec. information

Customer : CUMMINS  
Motor : 6 C 8.3L  
Power KW : 123.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## Start of delivery blocking

\*NW after s.o.d. : 11.00  
Tolerance : + 0.10  
Check tolerance \*NW : + 0.23

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference \* CS : 3.50

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.25

Tolerance mm : + 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 104.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0  
 Rated speed rpm : 350  
 Rack travel in mm : 5.40  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
 guide sleeve travel mm : 2.05  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1265  
 guide sleeve travel mm : 8.50  
 Tolerance mm : + 0.10  
 Rated speed rpm : 900  
 guide sleeve travel mm : 5.75  
 Tolerance mm : + 0.25  
 Rated speed rpm : 500

guide sleeve travel mm : 3.95  
 Tolerance mm : + 0.25

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1250

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 104.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever position degree : 117.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 10.20  
 Rated speed rpm : 1295  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1405  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1500

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.40  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 9.80

Rated speed rpm : 425

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.25  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

Rated speed rpm : 600  
rack travel mm : 11.60  
Tolerance mm : + - 0.10

Rated speed rpm : 750  
rack travel mm : 11.45  
Tolerance mm : + - 0.15

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check speed 1/min : > 80  
Check speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 102.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 20.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 454

Injection pump  
Pump designation : PES6A100D320/3RS2691  
EP type number : 9 410 230 025

Governor  
Governor design. : RSV400...900A7C2209  
: 1R  
Governor no. : 9 420 083 232

Cust. part No. :

## Customer-spec. information

Customer : CUMMINS  
Motor : 6 CT 8.3

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 10.00  
Tolerance : + 0.10  
Check tolerance \*NW : + 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack travel : 10.50  
Tolerance mm : + 1.50  
Difference \* CS : 3.50

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.75

Tolerance mm : + 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 129.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 400  
 Rack travel in mm : 5.70  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 18.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring pre-tension  
 click setting x : 5.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 129.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever position degree : 108.0  
 tolerance degree : + 4.0

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 943  
 rack travel mm : 11.70  
 Rated speed rpm : 979  
 Tolerance 1/min : + 2  
 rack travel mm : 4.00  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1100

Rated speed rpm : 944  
 rack travel mm : 11.70  
 Rated speed rpm : 980  
 Tolerance 1/min : + 2  
 rack travel mm : 4.00  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1100

Rated speed rpm : 945  
 rack travel mm : 11.70  
 Rated speed rpm : 981  
 Tolerance 1/min : + 2  
 rack travel mm : 4.00  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1100

Rated speed rpm : 946  
rack travel mm : 11.70

Rated speed rpm : 982  
Tolerance 1/min : + 2  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

Rated speed rpm : 947  
rack travel mm : 11.70

Rated speed rpm : 983  
Tolerance 1/min : + 2  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

Rated speed rpm : 948  
rack travel mm : 11.70

Rated speed rpm : 984  
Tolerance 1/min : + 2  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

#### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.20  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400  
rack travel mm : 5.70  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 440  
Tolerance 1/min : + 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 12.75  
Tolerance mm : + 0.05

Rated speed rpm : 550  
rack travel mm : 12.80  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 14.30  
Tolerance mm : + 0.30

#### Start interlock

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 11.0

#### LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 456

Injection pump  
Pump designation : PES6A100D320/3RS2691  
EP type number : 9 410 230 025

Governor  
Governor design. : RSV400...900A7C2209  
: 2R  
Governor no. : 9 420 083 237

Cust. part No. :

## Customer-spec. information

Customer : CUMMINS  
Motor : 6 C 8.3 L  
Power KW : 110.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 2.85  
Tolerance mm : + - 0.05  
Check  
tolerance mm : + - 0.10

Rack travel in mm : 10.50  
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + - 1.50  
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.25  
Tolerance mm : + - 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 101.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + - 3.0

Spred \_\_\_\_\_  
 Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0

Rated speed rpm : 400  
 Rack travel in mm : 6.00  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm3/1000 strokes : 18.5  
 Tolerance  
 cm3/1000 strokes : + - 2.0  
 Check tolerance  
 cm3/1000S. : + - 4.5  
 Spred  
 Tolerance  
 cm3/1000 strokes : 5.5  
 Check tolerance  
 cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35  
 governor spring  
 pre-tension  
 click setting x : 5.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm3/1000 strokes : 101.5  
 Tolerance  
 cm3/1000 strokes : + - 1.0  
 Check tolerance  
 cm3/1000S. : + - 3.0  
 Spred

Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0

#### CONTROL LEVER

control lever  
 position degree : 57.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 107.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 10.20  
 Rated speed rpm : 948  
 Tolerance 1/min : + - 3  
 rack travel mm : 4.00  
 Rated speed rpm : 975  
 Tolerance 1/min : + - 5  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1100

#### LOW IDLE

control lever  
 position degree : 77.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 27.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 400  
 rack travel mm : 5.50  
 Tolerance mm : + - 0.10

#### Testing:

Rated speed rpm : 400  
 rack travel mm : 6.00  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 440  
 Tolerance 1/min : + - 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 11.25  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 11.30  
Tolerance mm : + - 0.10

Rated speed rpm : 400  
rack travel mm : 12.50  
Tolerance mm : + - 0.30

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 11.0

---

#### LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 458

Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -2  
EP type number : 9 410 230 028

Governor  
Governor design. : RQV350...1100AB1218  
: 1R  
Governor no. : 9 420 080 302

Cust. part No. : 3354617

## Customer-spec. information

Customer : CUMMINS  
Motor : 6 CT  
Power KW : 156.6

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## Start of delivery blocking

\*NW after s.o.d. : 10.00  
Tolerance : + 0.10  
Check  
tolerance \*NW : + 0.23

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.65  
Tolerance mm : + - 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 350  
Rack travel in mm : 5.90  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1400  
guide sleeve  
travel mm : 8.95  
Tolerance mm : + - 0.25

Rated speed rpm : 1150  
guide sleeve  
travel mm : 7.00  
Tolerance mm : + - 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.65  
Tolerance mm : + - 0.25

Rated speed rpm : 650  
guide sleeve  
travel mm : 4.45  
Tolerance mm : + - 0.25

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1315

Rack travel in mm : 16.50  
Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : + - 4.0

control lever  
position degree : 111.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : 11.60  
Rated speed rpm : 1160  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1355  
Tolerance 1/min : + - 15

rack travel mm : 0.50  
Tolerance mm : + - 0.50  
Rated speed rpm : 1500

---

**LOW IDLE**

control lever  
position degree : 71.0  
tolerance degree : + - 4.0

control lever  
position degree : 16.0  
tolerance degree : + - 4.0

**Testing:**

Rated speed rpm : 350  
rack travel mm : 5.90  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 425

---

**TORQUE CONTROL**

Rated speed rpm : 1100  
rack travel mm : 12.65  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 13.65  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 13.40  
Tolerance mm : + - 0.10

Rated speed rpm : 950  
rack travel mm : 12.95  
Tolerance mm : + - 0.15

---

**ANEROID/ALTITUDE COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 13.65  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

---

**MEASUREMENT**

Rated speed rpm : 500  
Pressure hPa : 500  
rack travel mm : 0.40  
Tolerance mm : + - 0.10

Pressure hPa : 600  
rack travel mm : 1.35  
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : 800  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 94.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100

rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 11.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 459

Injection pump  
Pump designation : PES6A95D120RS2822  
EP type number : 9 400 084 029

Governor  
Governor design. : RQV350...1250AB1235  
: 2R  
Governor no. : 9 420 080 311

Cust. part No. : 3355394

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 BT  
Power KW : 119.3

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.80  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

### Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : + 0.10  
Check  
tolerance \*NW : + 0.23

Barrel no. : 1

### Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference \* CS : 2.50

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.75

Tolerance mm : + 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 87.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0  
 Rated speed rpm : 350  
 Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1550  
 guide sleeve travel mm : 8.55  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1300  
 guide sleeve travel mm : 6.85  
 Tolerance mm : + 0.05  
 Rated speed rpm : 350  
 guide sleeve travel mm : 1.45  
 Tolerance mm : + 0.25  
 Rated speed rpm : 700

guide sleeve travel mm : 4.25  
 Tolerance mm : + 0.25

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1530  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure hPa : 600  
 Del. quantity cm<sup>3</sup>/1000 strokes : 87.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever position degree : 56.0  
 tolerance degree : + 4.0

control lever position degree : 111.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 11.70  
 Rated speed rpm : 1315  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1560  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1750

---

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + - 4.0

control lever  
position degree : 14.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 8.50

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 600  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 410  
rack travel mm : 0.70  
Tolerance mm : + - 0.10

Pressure hPa : 320

---

rack travel mm : 0.15  
Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 600  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 11.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 460

Injection pump  
Pump designation : PES6A100D320/3RS2827  
EP type number : 9 400 084 030

Governor  
Governor design. : RQV350...1200AB1267R  
Governor no. : 9 420 080 319

Cust. part No. :

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 CTAA-8.3L  
Power KW : 179.1

### TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + - 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 2.75  
Tolerance mm : + - 0.05  
Check tolerance mm : + - 0.10

Rack travel in mm : 10.50  
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + - 1.50  
Difference ° CS : 4.00

### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.45  
Tolerance mm : + - 0.05

Del. quantity  
cm³/1000 strokes : 121.5

Tolerance  
cm³/1000 strokes : + - 2.0

Check tolerance  
cm³/1000s. : + - 4.0

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 350  
 Rack travel in mm : 4.80  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 6.15  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1250  
 guide sleeve  
 travel mm : 8.90  
 Tolerance mm : + 0.10  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.65  
 Tolerance mm : + 0.25  
 Rated speed rpm : 550  
 guide sleeve  
 travel mm : 3.25  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1320  
 guide sleeve  
 travel mm : 9.85  
 Tolerance mm : + 0.25

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1220  
 Rack travel in mm : 16.50  
 Tolerance nm : + 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 121.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
 position degree : 66.0  
 tolerance degree : + 4.0  
 control lever  
 position degree : 122.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 10.40  
 Rated speed rpm : 1245  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1320  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1450

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

control lever  
position degree : 13.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.50

Rated speed rpm : 425

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 11.45  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 1100  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 1150  
rack travel mm : 11.75  
Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 590

rack travel mm : 1.70  
Tolerance mm : + 0.10

Pressure hPa : 370  
rack travel mm : 0.45  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm3/1000 strokes : 135.5  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 4.0  
Spread  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 8.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1100  
Del. quantity  
cm3/1000 strokes : 130.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 3.0  
Spread  
Tolerance  
cm3/1000 strokes : 3.5  
Check tolerance  
cm3/1000S. : 8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 103.0  
Tolerance  
cm3/1000 strokes : + 1.0  
Check tolerance  
cm3/1000S. : + 3.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 11.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 462

Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -5  
EP type number : 9 400 084 031

Governor  
Governor design. : RSV400...900A7C2209  
: 3R  
Governor no. : 9 420 083 262

Cust. part No. : 3354950

## Customer-spec. information

Customer : CUMMINS  
Motor : 6 CT 8.3 L  
Power KW : 154.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 860

Rack travel in mm : 13.35  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 400  
 Rack travel in mm : 5.80  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring pre-tension  
 click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 860  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 142.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spred  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever position degree : 111.0  
 tolerance degree : + 4.0

##### ASSEMBLY GOVERNOR SETTING

Rated speed rpm	:	928
rack travel mm	:	12.30
Rated speed rpm	:	977
Tolerance 1/min	:	+ 4
rack travel mm	:	4.00
rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1100

Rated speed rpm	:	929
rack travel mm	:	12.30

Rated speed rpm	:	978
Tolerance 1/min	:	+ 4
rack travel mm	:	4.00

rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1100

Rated speed rpm	:	930
rack travel mm	:	12.30

Rated speed rpm	:	979
Tolerance 1/min	:	+ 4
rack travel mm	:	4.00

rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1100

Rated speed rpm	:	931
rack travel mm	:	12.30

Rated speed rpm	:	980
Tolerance 1/min	:	+ 4

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1100

Rated speed rpm : 932

rack travel mm : 12.30

Rated speed rpm : 981

Tolerance 1/min : + 4

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1100

rack travel mm : 12.30

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : + 0.55

#### LOW IDLE

control lever

position degree : 80.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.30

Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400

rack travel mm : 5.80

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 445

Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 860

rack travel mm : 13.35

Tolerance mm : + 0.05

Rated speed rpm : 600

rack travel mm : 13.40

Tolerance mm : + 0.10

Rated speed rpm : 450

rack travel mm : 14.00

Tolerance mm : + 0.30

Start interlock

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.00

Tolerance mm : + 1.00

Del. quantity

cm<sup>3</sup>/1000 strokes : 145.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 8.0

Check tolerance

cm<sup>3</sup>/1000S. : + 11.0

#### LOW IDLE

Rated speed rpm : 400

Del. quantity

cm<sup>3</sup>/1000 strokes : 20.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance

cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 083 463

Injection pump  
Pump designation : PES6A95D120RS2834  
EP type number : 9 400 084 032

Governor?  
Governor design. : RSV400...1100A8C2259  
: -1R  
Governor no. : 9 420 083 261

Cust. part No. : 3355079

## Customer-spec. information

Customer : CUMMINS  
Motor : 6BT 5.9 L  
Power KW : 108.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + - 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 2.80  
Tolerance mm : + - 0.05  
Check  
tolerance mm : + - 0.10

Rack travel in mm : 10.50  
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## Start of delivery blocking

\*NW after s.o.d. : 10.00  
Tolerance : + - 0.10  
Check  
tolerance \*NW : + - 0.23

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + - 1.50  
Difference \* CS : 2.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.95

Tolerance mm : +  
- 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 85.0  
 Tolerance cm<sup>3</sup>/1000 strokes : +  
- 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : +  
- 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0  
 Rated speed rpm : 400  
 Rack travel in mm : 5.10  
 Tolerance mm : +  
- 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 11.0  
 Tolerance cm<sup>3</sup>/1000 strokes : +  
- 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : +  
- 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : +  
- 0.35

governor spring pre-tension  
 click setting x : 4.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 85.0  
 Tolerance cm<sup>3</sup>/1000 strokes : +  
- 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : +  
- 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever position degree : 101.0  
 tolerance degree : +  
- 4.0  
 RATED SPEED  
 rack travel mm : 9.90  
 Rated speed rpm : 1145  
 Tolerance 1/min : +  
- 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1190  
 Tolerance 1/min : +  
- 15  
 rack travel mm : 0.85  
 Tolerance mm : +  
- 0.55  
 Rated speed rpm : 1350

##### LOW IDLE

control lever position degree : 71.0  
 tolerance degree : +  
- 4.0  
 Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travel mm : 4.60  
 Tolerance mm : +  
- 0.10

##### Testing:

Rated speed rpm : 400  
 rack travel mm : 5.10  
 Tolerance mm : +  
- 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 520

Tolerance 1/min : + 30  
Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 10.95  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 11.55  
Tolerance mm : + 0.05

Rated speed rpm : 900  
rack travel mm : 11.25  
Tolerance mm : + 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm3/1000 strokes : 93.5  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm3/1000 strokes : 86.0  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm3/1000 strokes : 125.0  
Tolerance  
cm3/1000 strokes : + 10.0

Check tolerance  
cm3/1000S. : + 13.0

---

#### LOW IDLE

Rated speed rpm : 400  
Del. quantity  
cm3/1000 strokes : 11.0  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000S. : + 4.5  
Spred  
Tolerance  
cm3/1000 strokes : 5.5  
Check tolerance  
cm3/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 223

Injection pump  
Pump designation : PES3A80D320RS1281  
EP type number : 9 400 083 054

Governor  
Governor design. : RSV350...1400A2C2129  
: -3R  
Governor no. : 9 420 083 265

Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : D 229-3

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240

## Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.0

Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance cm<sup>3</sup>/1000S. : 4.0

---

Rated speed rpm : 350  
 Rack travel in mm : 7.00  
 Tolerance mm : ± 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 8.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 1.5  
 Check tolerance cm<sup>3</sup>/1000S. : ± 3.5  
 Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : ± 0.35

governor spring pre-tension  
 click setting x : 5.50

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 55.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance cm<sup>3</sup>/1000S. : ± 2.0  
 Spreed

Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance cm<sup>3</sup>/1000S. : 4.0

---

##### CONTROL LEVER

control lever position degree : 112.0  
 tolerance degree : ± 4.0  
 RATED SPEED  
 rack travel mm : 8.90  
 Rated speed rpm : 1445  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1510  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1700

##### LOW IDLE

control lever position degree : 78.0  
 tolerance degree : ± 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 6.50  
 Tolerance mm : ± 0.10  
 Testing:  
 Rated speed rpm : 350  
 rack travel mm : 7.00  
 Tolerance mm : ± 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 670  
 Tolerance 1/min : ± 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

---

##### TORQUE CONTROL

Rated speed rpm : 1400

rack travel mm : 9.95  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 10.75  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 10.70  
Tolerance mm : + - 0.10

Rated speed rpm : 1100  
rack travel mm : 10.35  
Tolerance mm : + - 0.15

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

##### Aneroid pressure

hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

##### Aneroid pressure

hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 224

Injection pump  
Pump designation : PES6A90D320RS2605  
EP type number : 9 400 083 078

Governor  
Governor design. : RSV350...1050A1C2029  
: -2R  
Governor no. : 9 420 083 266

Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : TD 229-6

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 8.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 350  
 Rack travel in mm : 6.50  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : ± 0.35

governor spring  
 pre-tension  
 click setting x : 6.25

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 53.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 2.5  
 Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

#### CONTROL LEVER

control lever  
 position degree : 62.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 112.0  
 tolerance degree : ± 4.0

RATED SPEED  
 rack travel mm : 7.20  
 Rated speed rpm : 1075  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1105  
 Tolerance 1/min : ± 15

rack travel mm : 1.00  
 Tolerance mm : ± 0.70  
 Rated speed rpm : 1250

#### LOW IDLE

control lever  
 position degree : 83.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 33.0  
 tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 350  
 rack travel mm : 6.00  
 Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 350  
 rack travel mm : 6.50  
 Tolerance mm : ± 0.10

rack travel mm : 2.00  
 Rated speed rpm : 555  
 Tolerance 1/min : ± 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 8.25  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 9.05  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 9.00  
Tolerance mm : + - 0.10

Rated speed rpm : 875  
rack travel mm : 8.55  
Tolerance mm : + - 0.15

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 48.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 239

Injection pump  
Pump designation : PES6A90D320RS2701  
EP type number : 9 400 083 094

Governor  
Governor design. : RSV350...1150A2C2097  
: -1R  
Governor no. : 9 420 083 267

Cust. part No. :

### Customer-spec. information

Customer : MWM  
Motor : TD229-6  
Power KW : 106.7

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.70  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.85  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 350

Rack travel in mm : 6.00  
Tolerance mm : + - 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + - 0.35

governor spring  
pre-tension  
click setting x : 3.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + - 2.5

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

##### CONTROL LEVER

control lever  
position degree : 95.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : 9.80

Rated speed rpm : 1200  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1255  
Tolerance 1/min : + - 15

rack travel mm : 1.00  
Tolerance mm : + - 0.70  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 590  
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 10.85  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 11.45  
Tolerance mm : + - 0.05

Rated speed rpm : 750  
rack travel mm : 11.25  
Tolerance mm : + - 0.05

Rated speed rpm : 850  
rack travel mm : 11.05  
Tolerance mm : + - 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 11.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 240

Injection pump  
Pump designation : PES4A90D320RS2702  
EP type number : 9 400 083 095

Governor  
Governor design. : RSV350...1150A2C2129  
: -4R  
Governor no. : 9 420 083 268

Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : D 229-4  
Power KW : 75.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.70  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 9.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 64.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

---

Rated speed rpm : 350  
 Rack travel in mm : 5.70  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35  
 governor spring  
 pre-tension  
 click setting x : 4.75

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 64.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 2.5  
 Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

---

#### CONTROL LEVER

control lever  
 position degree : 49.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 99.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 8.00  
 Rated speed rpm : 1195  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1245  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1400

#### LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 24.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring

Rated speed rpm : 350  
 rack travel mm : 5.20  
 Tolerance mm : + - 0.10

#### Testing:

Rated speed rpm : 350  
 rack travel mm : 5.70  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 590  
 Tolerance 1/min : + - 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 9.05  
Tolerance mm : + - 0.05  
  
Rated speed rpm : 500  
rack travel mm : 10.15  
Tolerance mm : + - 0.05  
  
Rated speed rpm : 800  
rack travel mm : 9.80  
Tolerance mm : + - 0.10  
  
Rated speed rpm : 1000  
rack travel mm : 9.25  
Tolerance mm : + - 0.15

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 62.0  
Tolerance  
cm3/1000 strokes : + - 1.5  
Check tolerance  
cm3/1000S. : + - 3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm3/1000 strokes : 67.0  
Tolerance  
cm3/1000 strokes : + - 1.5  
Check tolerance  
cm3/1000S. : + - 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm3/1000 strokes : 12.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.0  
Spred  
Tolerance  
cm3/1000 strokes : 4.5  
Check tolerance  
cm3/1000S. : 7.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 241

Injection pump  
Pump designation : PES3A90D320RS2703  
EP type number : 9 400 083 096

Governor  
Governor design. : RSV350...1150A2C2129  
: -4R  
Governor no. : 9 420 083 268

Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : D 229-3  
Power KW : 42.7

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.70  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 8.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

---

Rated speed rpm : 350  
 Rack travel in mm : 5.60  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35

governor spring  
 pre-tension  
 click setting x : 4.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 58.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 2.5  
 Spred

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

---

##### CONTROL LEVER

control lever  
 position degree : 97.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 7.50  
 Rated speed rpm : 1195  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1235  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1400

##### LOW IDLE

control lever  
 position degree : 72.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 5.10  
 Tolerance mm : + - 0.10  
 Testing:  
 Rated speed rpm : 350  
 rack travel mm : 5.60  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 580  
 Tolerance 1/min : + - 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 8.55  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 9.45  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 9.00  
Tolerance mm : + - 0.10

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 61.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 243

Injection pump  
Pump designation : PES4A80D320RS1282-1  
EP type number : 9 400 083 097

Governor  
Governor design. : RS350/1500A2C2073  
Governor no. : 9 420 083 269

Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : D 229-4

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.70  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 9.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000s. : \_\_\_\_\_  
 \_\_\_\_\_ : 4.0

Rated speed rpm : 350  
 Rack travel in mm : 6.10  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000s. : + - 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35  
 governor spring  
 pre-tension  
 click setting x : 5.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 58.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000s. : + - 2.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
 cm<sup>3</sup>/1000s. : 4.0

##### CONTROL LEVER

control lever  
 position degree : 117.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 8.20  
 Rated speed rpm : 1585  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1640  
 Tolerance 1/min : + - 15  
 rack travel mm : 1.00  
 Tolerance mm : + - 0.70  
 Rated speed rpm : 1800

##### LOW IDLE

control lever  
 position degree : 60.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 6.10  
 Tolerance mm : + - 0.10  
 rack travel mm : 4.00  
 Rated speed rpm : 460  
 Tolerance 1/min : + - 30  
 Rated speed rpm : 250  
 CRT mm min. : > 6.80  
 Rated speed rpm : 550  
 CRT mm max. : < 3.20

##### TORQUE CONTROL

Rated speed rpm : 1500  
 rack travel mm : 9.25  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 500

rack travel mm : 10.65  
Tolerance mm : + - 0.05

Rated speed rpm : 900  
rack travel mm : 10.30  
Tolerance mm : + - 0.10

Rated speed rpm : 1200  
rack travel mm : 9.65  
Tolerance mm : + - 0.15

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 59.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 64.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

#### STARTING FUEL DELIVERY

---

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

---

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

---

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 254

Injection pump  
Pump designation : PES6A90D410RS2293  
EP type number : 0 410 896 031

Governor  
Governor design. : RSV500...900A0B2211  
: 1L  
Governor no. : 9 420 033 204

Cust. part No. :

## Customer-spec. information

Customer : MBB  
Motor : OM 352 (A)

## TEST BENCH REQUIREMENTS

Inlet Line : 2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.20  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 10.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

Rated speed rpm : 500

Rack travel in mm : 6.50

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 4.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 880  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

#### CONTROL LEVER

control lever  
position degree : 87.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 9.00  
Rated speed rpm : 908  
Tolerance 1/min : + 3

rack travel mm : 4.00  
Rated speed rpm : 953  
Tolerance 1/min : + 3

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1100

---

#### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 500  
rack travel mm : 6.00  
Tolerance mm : + 0.10

#### Testing:

Rated speed rpm : 500  
rack travel mm : 6.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 565  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 880  
rack travel mm : 10.05  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 10.10

Tolerance mm : + - 0.10

Rated speed rpm : 400  
rack travel mm : 11.50  
Tolerance mm : + - 0.10

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.50  
Tolerance mm : + - 0.30

---

#### LOW IDLE

Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Speed  
Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 255

Injection pump  
Pump designation : PES5A80D410RS2526  
EP type number : 9 400 093 007

Governor  
Governor design. : RS325/1400AOC2212L  
Governor no. : 9 420 083 295

Cust. part No. :

Customer-spec. information  
Customer : DEUTZ-ARGENTINA  
Motor : F5L913

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 1.95  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 11.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 66.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000s. : 4.0

Rated speed rpm : 325  
 Rack travel in mm : 8.50  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 11.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

control lever position degree : 113.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 10.50  
 Rated speed rpm : 1445  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1515  
 Tolerance 1/min : + 15  
 rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1650

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35  
 governor spring pre-tension  
 click setting x : 4.00

##### LOW IDLE

control lever position degree : 70.0  
 tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 325  
 rack travel mm : 8.50  
 Tolerance mm : + 0.10  
 rack travel mm : 6.00  
 Rated speed rpm : 420  
 Tolerance 1/min : + 30

Rated speed rpm : 280  
 CRT mm min. : > 8.80  
 Rated speed rpm : 550  
 CRT mm max. : < 4.40

##### TORQUE CONTROL

Rated speed rpm : 1400  
 rack travel mm : 11.55  
 Tolerance mm : + 0.05  
 Rated speed rpm : 500  
 rack travel mm : 12.25  
 Tolerance mm : + 0.05

Rated speed rpm : 1100  
 rack travel mm : 11.95  
 Tolerance mm : + 0.15

##### CONTROL LEVER

Start interlock

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity

cm<sup>3</sup>/1000 strokes : 56.5

Tolerance

cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance

cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure

hPa : -

Rated speed rpm : 1100

Del. quantity

cm<sup>3</sup>/1000 strokes : 63.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance

cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

---

#### STARTING FUEL DELIVERY

---

Rated speed rpm : 100

rack travel mm : 20.00

Tolerance mm : + 1.00

---

#### LOW IDLE

---

Rated speed rpm : 325

Del. quantity

cm<sup>3</sup>/1000 strokes : 11.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance

cm<sup>3</sup>/1000S. : + 3.5

Spread

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 257

Injection pump  
Pump designation : PES4A80D320RS1282  
EP type number : 9 400 083 056

Governor  
Governor design. : RSV350...1100A2C2129  
: -6R  
Governor no. : 9 420 083 270

Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : D 229-4

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 8.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.0

Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance cm<sup>3</sup>/1000S. : 4.0

---

Rated speed rpm : 350  
 Rack travel in mm : 6.50  
 Tolerance mm : ± 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 11.5  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 1.5  
 Check tolerance cm<sup>3</sup>/1000S. : ± 3.5  
 Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance cm<sup>3</sup>/1000S. : 4.0

---

#### CONTROL LEVER

control lever position degree : 98.0  
 tolerance degree : ± 4.0  
 RATED SPEED  
 rack travel mm : 7.70  
 Rated speed rpm : 1145  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1195  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1300

#### LOW IDLE

control lever position degree : 76.0  
 tolerance degree : ± 4.0  
 Setting point w/out bumper spring

Rated speed rpm : 350  
 rack travel mm : 6.00  
 Tolerance mm : ± 0.10

#### Testing:

Rated speed rpm : 350  
 rack travel mm : 6.50  
 Tolerance mm : ± 0.10

rack travel mm : 2.00  
 Rated speed rpm : 635  
 Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1100

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : ± 0.35  
 governor spring pre-tension click setting x : 5.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 49.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance cm<sup>3</sup>/1000S. : ± 2.0  
 Spreed

rack travel mm : 8.75  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 10.05  
Tolerance mm : + - 0.05

Rated speed rpm : 900  
rack travel mm : 9.25  
Tolerance mm : + - 0.15

Start interlock

Rated speed rpm : 350  
Del. quantity cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.5  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance cm<sup>3</sup>/1000S. : 6.0

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 51.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

End of test specification sheet

Aneroid pressure hPa : -  
Rated speed rpm : 900  
Del. quantity cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

---

#### STARTING FUEL DELIVERY

---

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

LOW IDLE

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 261

Injection pump  
Pump designation : PES6A80D320RS1271  
EP type number : 9 400 083 058

Governor  
Governor design. : RSV350...1250AG02029  
: -3R  
Governor no. : 9 420 083 27'

Cust. part No. :

### Customer-spec. information

Customer : MWM  
Motor : D 229-6

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.25  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

### Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 8.25  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 50.0

Tolerance  
cm³/1000 strokes : + 0.5

Check tolerance  
cm³/1000s. : + 2.0

Spred \_\_\_\_\_  
 Tolerance  
 cm3/1000 strokes : 2.5  
 Check tolerance  
 cm3/1000S. : 4.0  
 \_\_\_\_\_  
 Rated speed rpm : 350  
 Rack travel in mm : 6.00  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm3/1000 strokes : 8.0  
 Tolerance  
 cm3/1000 strokes : + - 1.5  
 Check tolerance  
 cm3/1000S. : + - 3.5  
 Spred  
 Tolerance  
 cm3/1000 strokes : 4.0  
 Check tolerance  
 cm3/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35  
 governor spring  
 pre-tension  
 click setting x : 4.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm3/1000 strokes : 50.0  
 Tolerance  
 cm3/1000 strokes : + - 0.5  
 Check tolerance  
 cm3/1000S. : + - 2.0  
 Spred

Tolerance  
 cm3/1000 strokes : 2.5  
 Check tolerance  
 cm3/1000S. : 4.0

##### CONTROL LEVER

control lever  
 position degree : 106.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 7.20  
 Rated speed rpm : 1295  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1335  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1450

##### LOW IDLE

control lever  
 position degree : 79.0  
 tolerance degree : + - 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 350  
 rack travel mm : 5.50  
 Tolerance mm : + - 0.10

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 6.00  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 510  
 Tolerance 1/min : + - 30

Rated speed rpm : 100  
 CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 8.25  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 9.85  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 9.25  
Tolerance mm : + - 0.15

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

### Start interlock

---

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Spread

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97

Test oil :

Combination No. : 9 400 085 266

### Injection pump

Pump designation : PES6A95D410RS2751  
EP type number : 9 400 084 013

### Governor

Governer design. : RSV650...1250A8C2231  
: L

Governer no. : 9 420 083 229

Cust. part No. :

### Customer-spec. information

Customer : FORD  
Motor : 6,6 L NA  
Power KW : 101.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle hold  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.20  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery differende

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 6.50

## BASIC SETTING

Rated speed rpm : 1220

Rack travel in mm : 11.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 82.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spred \_\_\_\_\_  
 Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0  
 \_\_\_\_\_  
 Rated speed rpm : 650  
 Rack travel in mm : 6.80  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm3/1000 strokes : 9.0  
 Tolerance  
 cm3/1000 strokes : + - 2.0  
 Check tolerance  
 cm3/1000S. : + - 4.5  
 Spred  
 Tolerance  
 cm3/1000 strokes : 5.5  
 Check tolerance  
 cm3/1000S. : 9.0

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35  
 governor spring  
 pre-tension  
 click setting x : 3.00

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1220  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm3/1000 strokes : 82.0  
 Tolerance  
 cm3/1000 strokes : + - 1.0  
 Check tolerance  
 cm3/1000S. : + - 3.0  
 Spred

Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0

---

#### CONTROL LEVER

control lever  
 position degree : 101.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 10.00  
 Rated speed rpm : 1268  
 Tolerance 1/min : + - 3  
 rack travel mm : 4.00  
 Rated speed rpm : 1298  
 Tolerance 1/min : + - 3  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1420

---

#### LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : + - 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 650  
 rack travel mm : 6.30  
 Tolerance mm : + - 0.10

#### Testing:

Rated speed rpm : 650  
 rack travel mm : 6.80  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 760  
 Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1220

rack travel mm : 11.05  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 11.05  
Tolerance mm : + 0.05

### Start interlock

---

### FUEL DELIVERY CHARACTERISTICS

#### Aneroid pressure

hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 71.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 11.0

---

### LOW IDLE

Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil :

Combination No. : 9 400 085 267

Injection pump  
Pump designation : PES6A95D410RS2751  
EP type number : 9 400 084 013

Governor  
Governor design. : RSV650...1250A8C2231  
: -1L  
Governor no. : 9 420 083 230

Cust. part No. :

## Customer-spec. information

Customer : FORD  
Motor : 6,6 L TC  
Power KW : 112.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.20  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 6.50

## BASIC SETTING

Rated speed rpm : 1220

Rack travel in mm : 11.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spreed \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0  
 \_\_\_\_\_  
 Rated speed rpm : 650  
 Rack travel in mm : 6.80  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35  
 governor spring  
 pre-tension  
 click setting x : 3.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1220  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 92.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
 position degree : 101.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 10.90  
 Rated speed rpm : 1268  
 Tolerance 1/min : + 3  
 rack travel mm : 4.00  
 Rated speed rpm : 1303  
 Tolerance 1/min : + 3  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1420

##### LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 650  
 rack travel mm : 6.30  
 Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 650  
 rack travel mm : 6.80  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 760  
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1220

rack travel mm : 11.95  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 11.95  
Tolerance mm : + - 0.05

---

End of test specification sheet

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 11.0

---

#### LOW IDLE

Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 268

Injection pump  
Pump designation : PES4A90D320RS2702  
EP type number : 9 400 083 095

Governor  
Governor design. : RSV350...1150A2C2129  
: -7R  
Governor no. : 9 420 083 273

Cust. part No. :

### Customer-spec. information

Customer : MWM  
Motor : TD 229 EC-4  
Power KW : 66.2

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.70  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

### BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.35  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

---

Rated speed rpm : 350  
 Rack travel in mm : 5.60  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35  
 governor spring  
 pre-tension  
 click setting x : 4.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 78.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 2.5  
 Spred

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

---

##### CONTROL LEVER

control lever  
 position degree : 97.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 9.30  
 Rated speed rpm : 1195  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1255  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1400

---

##### LOW IDLE

control lever  
 position degree : 72.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 5.10  
 Tolerance mm : + - 0.10  
 Testing:  
 Rated speed rpm : 350  
 rack travel mm : 5.60  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 580  
 Tolerance 1/min : + - 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

---

##### TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 10.35  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 10.85  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 10.60  
Tolerance mm : + - 0.10

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 71.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

Aneroid pressure

hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 72.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 270

Injection pump  
Pump designation : PES6A90D320RS2718  
EP type number : 9 400 084 003

Governor  
Governor design. : RSV350...1400A2C2215  
: -1R  
Governor no. : 9 420 083 231

Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : D229/6

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.75  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 62.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spreed \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0  
 \_\_\_\_\_  
 Rated speed rpm : 350  
 Rack travel in mm : 5.50  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : ± 0.35  
 governor spring  
 pre-tension  
 click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 62.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 2.5  
 Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

##### CONTROL LEVER

control lever  
 position degree : 59.0  
 tolerance degree : ± 4.0  
 RATED SPEED  
 rack travel mm : 7.50  
 Rated speed rpm : 1445  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1490  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1650

##### LOW IDLE

control lever  
 position degree : 25.0  
 tolerance degree : ± 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 5.00  
 Tolerance mm : ± 0.10

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 5.50  
 Tolerance mm : ± 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 590  
 Tolerance 1/min : ± 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1400

rack travel mm : 8.55  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 9.15  
Tolerance mm : + 0.05

Rated speed rpm : 900  
rack travel mm : 8.95  
Tolerance mm : + 0.15

Start interlock

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

End of test specification sheet

Aneroid pressure  
hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00

---

#### LOW IDLE

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 272

Injection pump  
Pump designation : PES4A90D320RS2744  
EP type number : 9 400 084 012

Governor  
Governor design. : RSV350...1300A2C2215  
: -2R  
Governor no. : 9 420 083 275

Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : TD 229-4

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.75  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.65  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

---

Rated speed rpm : 350  
 Rack travel in mm : 5.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35  
 governor spring  
 pre-tension  
 click setting x : 5.75

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 89.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 2.5  
 Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

---

##### CONTROL LEVER

control lever  
 position degree : 109.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 9.60  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1425  
 Tolerance 1/min : + 15  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1600

##### LOW IDLE

control lever  
 position degree : 78.0  
 tolerance degree : + 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 4.50  
 Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 5.00  
 Tolerance mm : + 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 570  
 Tolerance 1/min : + 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1300

rack travel mm : 10.65  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 11.25  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 11.05  
Tolerance mm : + - 0.15

Rated speed rpm : 900  
rack travel mm : 10.85  
Tolerance mm : + - 0.05

#### Start interlock

Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Spred  
Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.5

Aneroid pressure hPa : -  
Rated speed rpm : 900  
Del. quantity cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 283

Injection pump  
Pump designation : PES6A90D410RS2293  
EP type number : 0 410 896 031

Governor  
Governor design. : RSV350...1250A0C1150  
: -3L  
Governor no. : 9 420 083 255

Cust. part No. :

## Customer-spec. information

Customer : MBB  
Motor : OM 352-A

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.20  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 62.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 350  
  
Rack travel in mm : 7.20  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800  
  
Rack travel in mm : 0.65  
Tolerance mm : + - 0.35  
  
governor spring  
pre-tension  
click setting x : 3.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 62.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 2.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

##### CONTROL LEVER

control lever  
position degree : 104.0  
tolerance degree : + - 4.0  
  
RATED SPEED  
rack travel mm : 9.00  
Rated speed rpm : 1295  
Tolerance 1/min : + - 5  
  
rack travel mm : 4.00  
Rated speed rpm : 1350  
Tolerance 1/min : + - 15  
  
rack travel mm : 0.85  
Tolerance mm : + - 0.55  
Rated speed rpm : 1450

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + - 4.0  
  
Setting point w/out bumper spring  
  
Rated speed rpm : 350  
rack travel mm : 6.70  
Tolerance mm : + - 0.10  
  
Testing:  
  
Rated speed rpm : 350  
rack travel mm : 7.20  
Tolerance mm : + - 0.10  
  
rack travel mm : 2.00  
Rated speed rpm : 460  
Tolerance 1/min : + - 30  
  
Rated speed rpm : 100  
CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 10.05  
Tolerance mm : + - 0.05  
  
Rated speed rpm : 500  
rack travel mm : 10.10

Tolerance mm : + - 0.10

Rated speed rpm : 400  
rack travel mm : 11.50  
Tolerance mm : + - 0.30

Start interlock

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 200  
rack travel mm : 14.50  
Tolerance mm : + - 0.30

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 286

Injection pump  
Pump designation : PES6A90D320RS2701  
EP type number : 9 400 083 094

Governor  
Governor design. : RSV350...1150A2C2097  
: -2R  
Governor no. : 9 420 083 224

Cust. part No. :

---

Customer-spec. information  
Customer : MWM  
Motor : D 229-6  
Power KW : 81.0

---

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.70  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.50

---

### BASIC SETTING

Rated speed rpm : 1150

---

Rack travel in mm : 9.25  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 62.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

---

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 350

Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring  
 pre-tension  
 click setting x : 4.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 62.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 2.5  
 Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

##### CONTROL LEVER

control lever  
 position degree : 46.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 8.20  
 Rated speed rpm : 1195  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1245  
 Tolerance 1/min : + 15

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1400

##### LOW IDLE

control lever  
 position degree : 20.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
 rack travel mm : 5.50  
 Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 6.00  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 600  
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 9.25  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 9.85  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 9.55  
Tolerance mm : + - 0.15

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 54.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

LOW IDLE

G02

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 293

Injection pump  
Pump designation : PES6A80D410RS2755  
EP type number : 9 400 093 005

Governor  
Governor design. : RQV300...1400AB1234L  
Governor no. : 9 420 080 241

Cust. part No. :

---

Customer-spec. information  
Customer : DEUTZ-ARGENTINA  
Motor : F 6 L 913

---

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 1.95  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 69.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

Rated speed rpm : 300  
 Rack travel in mm : 6.00  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 10.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 775  
 guide sleeve travel mm : 4.35  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 1460  
 guide sleeve travel mm : 8.50  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 300  
 guide sleeve travel mm : 0.95  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 550  
 guide sleeve travel mm : 2.85  
 Tolerance mm : + - 0.15  
 Rated speed rpm : 950  
 guide sleeve travel mm : 5.35  
 Tolerance mm : + - 0.15

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1420  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 69.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 0.5  
 Check tolerance cm<sup>3</sup>/1000S. : + - 2.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance cm<sup>3</sup>/1000S. : 4.0

##### CONTROL LEVER

control lever position degree : 59.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 11.00  
 Rated speed rpm : 1445  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1585  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1700

##### LOW IDLE

control lever position degree : 10.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : 6.00  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 100  
 CRT mm min. : > 7.50

Rated speed rpm : 450

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 12.95  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.80  
Tolerance mm : + 0.10

Rated speed rpm : 1200  
rack travel mm : 12.35  
Tolerance mm : + 0.15

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 64.0  
Tolerance cm3/1000 strokes : + 1.5  
Check tolerance cm3/1000S. : + 3.0  
Spread  
Tolerance cm3/1000 strokes : 3.5  
Check tolerance cm3/1000S. : 7.0

##### Aneroid pressure

hPa : -  
Rated speed rpm : 1000  
Del. quantity cm3/1000 strokes : 68.0  
Tolerance cm3/1000 strokes : + 1.5  
Check tolerance cm3/1000S. : + 3.0  
Spread

Tolerance cm3/1000 strokes : 3.5  
Check tolerance cm3/1000S. : 7.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity cm3/1000 strokes : 10.0  
Tolerance cm3/1000 strokes : + 1.5  
Check tolerance cm3/1000S. : + 3.5  
Spread  
Tolerance cm3/1000 strokes : 4.0  
Check tolerance cm3/1000S. : 6.0

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 295

Injection pump  
Pump designation : PES4A90D410RS2666  
EP type number : 0 410 894 029

Governor  
Governor design. : RQV300...1400AB1065  
: 5L  
Governor no. : 0 420 212 169

Cust. part No. : 016 074 87 02

## Customer-spec. information

Customer : MBB  
Motor : OM364  
Power KW : 66.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.30  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 63.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : 7.0

Rated speed rpm : 300  
 Rack travel in mm : 8.70  
 Tolerance mm :  $\pm$  0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 10.0  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
 guide sleeve travel mm : 8.55  
 Tolerance mm :  $\pm$  0.05  
 Rated speed rpm : 300  
 guide sleeve travel mm : 1.05  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 500  
 guide sleeve travel mm : 2.55  
 Tolerance mm :  $\pm$  0.25  
 Rated speed rpm : 750  
 guide sleeve travel mm : 4.20  
 Tolerance mm :  $\pm$  0.10

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1500  
 Rack travel in mm : 16.50  
 Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 63.5  
 Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  0.5  
 Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  2.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

##### CONTROL LEVER

control lever position degree : 62.0  
 tolerance degree :  $\pm$  4.0  
 control lever position degree : 111.0  
 tolerance degree :  $\pm$  4.0  
 RATED SPEED  
 rack travel mm : 9.90  
 Rated speed rpm : 1455  
 Tolerance 1/min :  $\pm$  5  
 rack travel mm : 4.00  
 Rated speed rpm : 1575  
 Tolerance 1/min :  $\pm$  15  
 rack travel mm : 0.50  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1700

##### LOW IDLE

control lever position degree : 72.0  
 tolerance degree :  $\pm$  4.0  
 control lever position degree : 23.0  
 tolerance degree :  $\pm$  4.0  
 Testing:  
 Rated speed rpm : 300  
 rack travel mm : 8.70  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. : > 10.00  
Rated speed rpm : 610

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 10.95  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

Rated speed rpm : 1150  
rack travel mm : 11.70  
Tolerance mm : + - 0.10

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 800  
Del. quantity cm3/1000 strokes : 59.5  
Tolerance cm3/1000 strokes : + - 1.5  
Check tolerance cm3/1000S. : + - 3.5  
Spread  
Tolerance cm3/1000 strokes : 4.0  
Check tolerance cm3/1000S. : 8.0

Aneroid pressure hPa : -  
Rated speed rpm : 1150  
Del. quantity cm3/1000 strokes : 66.0  
Tolerance cm3/1000 strokes : + - 1.5  
Check tolerance cm3/1000S. : + - 3.5  
Spread

Tolerance cm3/1000 strokes : 4.0  
Check tolerance cm3/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.20  
Tolerance mm : + - 0.20  
Del. quantity cm3/1000 strokes : 83.0  
Tolerance cm3/1000 strokes : + - 7.5  
Check tolerance cm3/1000S. : + - 10.0

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity cm3/1000 strokes : 10.0  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0  
Spread  
Tolerance cm3/1000 strokes : 4.5  
Check tolerance cm3/1000S. : 7.0

End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

**Edition** : 21.02.97  
**Test oil** : ISO 4113

**Combination No.** : 9 400 085 297

**Injection pump**  
**Pump designation** : PES6A95D410RS2758-1  
**EP type number** : 9 400 084 015

**Governor**  
**Governer design.** : RQV350...1200AB1220  
: 2L  
**Governer no.** : 9 420 080 252

**Cust. part No.** :

**Customer-spec. information**

**Customer** : FORD  
**Motor** : 6,6 L TC  
**Power KW** : 138.0

**TEST BENCH REQUIREMENTS**

**Inlet line** : 3.2

**Test oil inlet temp. °C** : 40  
**Tolerance °C** : + 2.0

**Overflow valve** : 1 419 992 198

**Inlet press. bar** : 1.5

**Test nozzle holder assembly** : 1 688 901 017

**Opening pressure bar** : 208.5  
**Tolerance bar** : + 1.5

**Test lines** : 1 680 750 015

**Outside diameter** : 6.0

x inside diameter : 3.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

**Test pressure bar** : 26.0  
**Tolerance bar** : + 1.0

**Prestroke mm** : 3.00  
**Tolerance mm** : + 0.05  
**Check tolerance mm** : + 0.10

**Rack travel in mm** : 10.50  
**Tolerance mm** : + 1.50

**Firing order** : 1- 5- 3- 6- 2-  
: 4

**Phasing** : 0-60-120-180-240

**BASIC SETTING**

**Rated speed rpm** : 1200

**Rack travel in mm** : 14.05  
**Tolerance mm** : + 0.05

**Del. quantity cm<sup>3</sup>/1000 strokes** : 109.0

**Tolerance cm<sup>3</sup>/1000 strokes** : + 1.0

**Check tolerance cm<sup>3</sup>/1000S.** : + 3.0

**Spread**

**Tolerance cm<sup>3</sup>/1000 strokes** : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rack travel in mm : 7.90  
Tolerance mm : + 1.30

Rated speed rpm : 350

FULL LOAD DELIVERY AT FULL LOAD STOP

Rack travel in mm : 6.80  
Tolerance mm : + 0.10

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5

Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve

##### CONTROL LEVER

travel mm : 1.90  
Tolerance mm : + 0.20

control lever  
position degree : 61.0  
tolerance degree : + 4.0

Rated speed rpm : 1200  
guide sleeve

control lever  
position degree : 117.0  
tolerance degree : + 4.0

travel mm : 7.80  
Tolerance mm : + 0.10

RATED SPEED  
rack travel mm : 13.00  
Rated speed rpm : 1250  
Tolerance 1/min : + 5

Rated speed rpm : 700  
guide sleeve

rack travel mm : 4.00  
Rated speed rpm : 1395  
Tolerance 1/min : + 15

travel mm : 4.30  
Tolerance mm : + 0.20

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1500

Rated speed rpm : 500  
guide sleeve

LOW IDLE

travel mm : 3.30  
Tolerance mm : + 0.20

control lever  
position degree : 71.0  
tolerance degree : + 4.0

Rated speed rpm : 270  
guide sleeve

control lever  
position degree : 16.0  
tolerance degree : + 4.0

travel mm : 1.00  
Tolerance mm : + 0.20

### Testing:

Rated speed rpm	:	350
rack travel mm	:	6.80
Tolerance mm	:	+ 0.10
Rated speed rpm	:	100
CRT mm min.	:	> 10.00
Rated speed rpm	:	395

### TORQUE CONTROL

Rated speed rpm	:	1200
rack travel mm	:	14.05
Tolerance mm	:	+ 0.05
Rated speed rpm	:	850
rack travel mm	:	14.05
Tolerance mm	:	+ 0.05

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:	500
Pressure hPa	:	700
rack travel mm	:	14.05
Tolerance mm	:	+ 0.05

Pressure hPa	:	-
Rated speed rpm	:	500

#### MEASUREMENT

Rated speed rpm	:	500
Pressure hPa	:	490
rack travel mm	:	3.40
Tolerance mm	:	+ 0.20
Pressure hPa	:	355
rack travel mm	:	1.55
Tolerance mm	:	+ 0.05

#### Start interlock

Rated speed rpm	:	> 100
Rated speed rpm	:	< 270
Check speed 1/min	:	> 80
Check speed 1/min	:	< 290

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	700
Rated speed rpm	:	850
Del. quantity cm <sup>3</sup> /1000 strokes	:	105.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
Spread		
Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	8.0
Aneroid pressure hPa	:	-
Rated speed rpm	:	500
Del. quantity cm <sup>3</sup> /1000 strokes	:	54.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 3.0
Spread		
Tolerance cm <sup>3</sup> /1000 strokes	:	3.5
Check tolerance cm <sup>3</sup> /1000S.	:	8.0

### STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	20.50
Tolerance mm	:	+ 0.50
Del. quantity cm <sup>3</sup> /1000 strokes	:	160.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 7.5
Check tolerance cm <sup>3</sup> /1000S.	:	+ 10.0

### LOW IDLE

Rated speed rpm	:	350
Del. quantity cm <sup>3</sup> /1000 strokes	:	22.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 2.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 21.02.97  
Test oil :

Combination No. : 9 400 085 299

Injection pump  
Pump designation : PES6A95D410RS2751  
EP type number : 9 400 084 013

Governor  
Governor design. : RSV650...1250A8C2231  
: -2L  
Governor no. : 9 420 083 236

Cust. part No. :

### Customer-spec. information

Customer : FORD  
Motor : 6,5 L TC  
Power KW : 123.8

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.20  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 6.50

### BASIC SETTING

Rated speed rpm : 1220

Rack travel in mm : 12.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 99.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spred \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 650  
 Rack travel in mm : 6.80  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring  
 pre-tension  
 click setting x : 3.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1220  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 99.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spred

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
 position degree : 101.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 11.50  
 Rated speed rpm : 1268  
 Tolerance 1/min : + 3  
 rack travel mm : 4.00  
 Rated speed rpm : 1303  
 Tolerance 1/min : + 3  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1420

##### LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring  
 Rated speed rpm : 650  
 rack travel mm : 6.30  
 Tolerance mm : + 0.10

##### Testing:

Rated speed rpm : 650  
 rack travel mm : 6.80  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 760  
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1220

rack travel mm : 12.55  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 12.55  
Tolerance mm : + - 0.05

Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 11.0

---

#### LOW IDLE

Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 301

Injection pump  
Pump designation : PES6A85D410RS2415  
EP type number : 0 410 886 907

Governor  
Governor design. : RQV350...1325AB1234  
: 1L  
Governor no. : 9 420 080 259

Cust. part No. :

## Customer-spec. information

Customer : DEUTZ-ARGENTINA  
Motor : BF 6L 913  
Power KW : 116.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 32.0  
Tolerance bar : + 1.0

Prestroke mm : 1.95  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 1325

Rack travel in mm : 11.15  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 2.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

Rated speed rpm : 350

FULL LOAD DELIVERY AT FULL LOAD STOP

Rack travel in mm : 8.00  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 1325  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 900  
guide sleeve  
travel mm : 4.95  
Tolerance mm : + 0.25

##### CONTROL LEVER

control lever  
position degree : 61.0  
tolerance degree : + 4.0

Rated speed rpm : 1400  
guide sleeve  
travel mm : 8.90  
Tolerance mm : + 0.10

control lever  
position degree : 116.0  
tolerance degree : + 4.0

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : + 0.25

RATED SPEED  
rack travel mm : 10.10  
Rated speed rpm : 1370  
Tolerance 1/min : + 5

Rated speed rpm : 600  
guide sleeve  
travel mm : 2.85  
Tolerance mm : + 0.25

rack travel mm : 4.00  
Rated speed rpm : 1470  
Tolerance 1/min : + 15

Rated speed rpm : 1200  
guide sleeve  
travel mm : 6.95  
Tolerance mm : + 0.25

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1600

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1350

LOW IDLE  
control lever  
position degree : 70.0  
tolerance degree : + 4.0

control lever  
position degree : 15.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 450

### TORQUE CONTROL

Rated speed rpm : 1325  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 12.35  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 12.25  
Tolerance mm : + - 0.15

Rated speed rpm : 1100  
rack travel mm : 11.60  
Tolerance mm : + - 0.10

### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 300

Check speed 1/min : > 80  
Check speed 1/min : < 320

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 75.0  
Tolerance cm3/1000 strokes : + - 1.5  
Check tolerance cm3/1000S. : + - 3.5  
Spread Tolerance cm3/1000 strokes : 4.0  
Check tolerance cm3/1000S. : 8.0

### Aneroid pressure

hPa : -  
Rated speed rpm : 800  
Del. quantity cm3/1000 strokes : 79.0  
Tolerance cm3/1000 strokes : + - 1.5  
Check tolerance cm3/1000S. : + - 3.5  
Spread Tolerance cm3/1000 strokes : 4.0  
Check tolerance cm3/1000S. : 8.0

### Aneroid pressure

hPa : -  
Rated speed rpm : 1100  
Del. quantity cm3/1000 strokes : 77.5  
Tolerance cm3/1000 strokes : + - 1.5  
Check tolerance cm3/1000S. : + - 3.5  
Spread Tolerance cm3/1000 strokes : 4.0  
Check tolerance cm3/1000S. : 8.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

### LOW IDLE

Rated speed rpm : 350  
Del. quantity cm3/1000 strokes : 16.0  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0  
Spread Tolerance cm3/1000 strokes : 4.5  
Check tolerance cm3/1000S. : 7.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 302

Injection pump  
Pump designation : PES6A90D320RS2767  
EP type number : 9 400 084 017

Governor  
Governor design. : RSV300...1400A0C2207  
: -2R  
Governor no. : 9 420 083 299

Cust. part No. : 905200569079

### Customer-spec. information

Customer : MWM  
Motor : TBD 229-6 EC  
Power KW : 185.0

### TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.55  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

### BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 14.35  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 120.5

Tolerance  
cm³/1000 strokes : + 0.5

Check tolerance  
cm³/1000S. : + 2.5

Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

---

Rated speed rpm : 300  
 Rack travel in mm : 8.00  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 15.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

governor spring  
 pre-tension  
 click setting x : 4.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 120.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance cm<sup>3</sup>/1000S. : + 2.5  
 Spreed

Tolerance cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : 7.0

##### CONTROL LEVER

control lever  
 position degree : 116.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 13.30  
 Rated speed rpm : 1445  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1555  
 Tolerance 1/min : + 15  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1700

##### LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree : + 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 300  
 rack travel mm : 7.50  
 Tolerance mm : + 0.10  
 Testing:  
 Rated speed rpm : 300  
 rack travel mm : 8.00  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 485  
 Tolerance 1/min : + 30  
 Rated speed rpm : 100  
 CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1400

rack travel mm : 14.35  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 14.40  
Tolerance mm : + - 0.10

Rated speed rpm : 350  
rack travel mm : 15.80  
Tolerance mm : + - 0.30

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil :

Combination No. : 9 400 085 303

Injection pump  
Pump designation : PES6A95D410RS2714  
EP type number : 9 400 084 001

Governor  
Governor design. : RQV375...1300AB1208  
: 3L  
Governor no. : 9 420 080 263

Cust. part No. :

### Customer-spec. information

Customer : FORD  
Motor : 6,6 TC  
Power KW : 127.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.20  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

### Beginning of delivery difference

and maximum rack  
travel : 10.95  
Tolerance mm : + 1.95  
Difference ° CS : 2.50

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.15  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 375  
 Rack travel in mm : 6.50  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 6.45  
 Tolerance mm : + - 0.15  
 Rated speed rpm : 1345  
 guide sleeve  
 travel mm : 8.55  
 Tolerance mm : + - 0.05

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.45  
 Tolerance mm : + - 0.15

Rated speed rpm : 700  
 guide sleeve  
 travel mm : 4.30  
 Tolerance mm : + - 0.20

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1

Rated speed rpm : 1345  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 87.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
 position degree : 63.0  
 tolerance degree : + - 4.0

RATED SPEED  
 rack travel mm : 11.10  
 Rated speed rpm : 1345  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1465  
 Tolerance 1/min : + - 15

rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1600

##### LOW IDLE

control lever  
 position degree : 16.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 375  
 rack travel mm : 6.50  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 680  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 9.50

Rated speed rpm : 495

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 12.15  
Tolerance mm : + 0.05

Rated speed rpm : 850  
rack travel mm : 12.55  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.35  
Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 12.55  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 420  
rack travel mm : 0.40  
Tolerance mm : + 0.10

Pressure hPa : 510  
rack travel mm : 1.15  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check speed 1/min : > 80

Check speed 1/min : < 310

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
Rated speed rpm : 850  
Del. quantity cm<sup>3</sup>/1000 strokes : 86.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 8.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 62.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 8.0  
Check tolerance cm<sup>3</sup>/1000S. : + 11.0

#### LOW IDLE

Rated speed rpm : 375  
Del. quantity cm<sup>3</sup>/1000 strokes : 9.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance : + 4.5  
cm<sup>3</sup>/1000S.  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil :

Combination No. : 9 400 085 304

Injection pump  
Pump designation : PES6A95D412RS2709  
EP type number : 9 400 085 099

Governor  
Governor design. : RQV350...1400AB1202  
: 3L  
Governor no. : 9 420 080 262

Cust. part No. :

### Customer-spec. information

Customer : FORD  
Motor : 6.6 L NA  
Power KW : 108.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.20  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 2.50

### BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.45  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 75.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000s. : + 3.0

Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 350  
 Rack travel in mm : 6.70  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 10.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
 Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve travel mm : 6.25  
 Tolerance mm : + - 0.15

Rated speed rpm : 1420  
 guide sleeve travel mm : 8.55  
 Tolerance mm : + - 0.05

Rated speed rpm : 350  
 guide sleeve travel mm : 1.45  
 Tolerance mm : + - 0.15

Rated speed rpm : 700  
 guide sleeve travel mm : 4.40  
 Tolerance mm : + - 0.20

##### GUIDE SLEEVE POSITION

control lever position degree : - 1

Rated speed rpm : 1420  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 75.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
 Spreed  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever position degree : 62.0  
 tolerance degree : + - 4.0

RATED SPEED  
 rack travel mm : 9.40  
 Rated speed rpm : 1455  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1555  
 Tolerance 1/min : + - 15

rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1720

##### LOW IDLE

control lever position degree : 14.0  
 tolerance degree : + - 4.0

##### Testing:

Rated speed rpm : 350  
 rack travel mm : 6.70  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 590  
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 495

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 10.45  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 10.45  
Tolerance mm : + - 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check speed 1/min : > 80  
Check speed 1/min : < 310

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -  
Rated speed rpm : 800  
Del. quantity cm3/1000 strokes : 64.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0  
Spread  
Tolerance cm3/1000 strokes : 5.0  
Check tolerance cm3/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity cm3/1000 strokes : 119.0

Tolerance cm3/1000 strokes : + - 8.0  
Check tolerance cm3/1000S. : + - 11.0

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity cm3/1000 strokes : 10.0  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.5  
Spread  
Tolerance cm3/1000 strokes : 5.5  
Check tolerance cm3/1000S. : 9.0

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 306

Injection pump  
Pump designation : PES6A90D410RS2596  
EP type number : 0 410 896 073

Governor  
Governor design. : RQV300...1400AB1066  
: 7L  
Governor no. : 9 420 080 267

Cust. part No. : 0180742402

## Customer-spec. information

Customer : MBB  
Motor : OM352A  
Power KW : 121.4

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 300  
  
Rack travel in mm : 9.00  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm : + 0.05  
  
Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm : + 0.25  
  
Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm : + 0.25  
  
Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500  
  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
Aneroid pressure  
hPa : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 78.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

CONTROL LEVER

control lever  
position degree : 64.0  
tolerance degree : + 4.0

control lever  
position degree : 114.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 11.50  
Rated speed rpm : 1445  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1590  
Tolerance 1/min : + 20

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1750

LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + 4.0

control lever  
position degree : 21.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 9.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 10.30

Rated speed rpm : 620

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 12.45  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 13.25  
Tolerance mm : + - 0.05

Rated speed rpm : 1000  
rack travel mm : 12.80  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 13.25  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 12.35  
Tolerance mm : + - 0.05

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 375  
rack travel mm : 12.60  
Tolerance mm : + - 0.10

Pressure hPa : 465  
rack travel mm : 12.95  
Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 66.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.5

Aneroid pressure hPa : 700  
Rated speed rpm : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 76.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.5

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 57.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 0.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 2.5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 16.00  
Tolerance mm : + - 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 7.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 10.0

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS**

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 307

Injection pump  
Pump designation : PES4A95D410RS2774  
EP type number : 9 400 084 019

Governor  
Governor design. : RQV300...1300AB1228  
: 1L  
Governor no. : 9 420 080 268

Cust. part No. : 018 074 50 02

**Customer-spec. information**

Customer : MBB  
Motor : OM 364 A  
Power KW : 85.0

**TEST BENCH REQUIREMENTS**

Inlet Line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

**BASIC SETTING**

Rated speed rpm : 1300

Rack travel in mm : 10.65  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 91.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 300  
 Rack travel in mm : 7.00  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 10.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
 guide sleeve travel mm : 8.55  
 Tolerance mm : + 0.05  
 Rated speed rpm : 300  
 guide sleeve travel mm : 1.05  
 Tolerance mm : + 0.25  
 Rated speed rpm : 500  
 guide sleeve travel mm : 2.55  
 Tolerance mm : + 0.25  
 Rated speed rpm : 750  
 guide sleeve travel mm : 4.20  
 Tolerance mm : + 0.10

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1500  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure hPa : 700  
 Del. quantity cm<sup>3</sup>/1000 strokes : 91.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever position degree : 59.0  
 tolerance degree : + 4.0

control lever position degree : 108.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 9.60  
 Rated speed rpm : 1365  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1490  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1640

##### LOW IDLE

control lever position degree : 68.0  
 tolerance degree : + 4.0

control lever position degree : 19.0  
 tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 300  
 rack travel mm : 7.00  
 Tolerance mm : + 0.10

Rated speed rpm : 100  
 CRT mm min. : > 8.00  
 Rated speed rpm : 485

#### TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 10.65  
 Tolerance mm : ± 0.05

Rated speed rpm : 800  
 rack travel mm : 11.05  
 Tolerance mm : ± 0.05

Rated speed rpm : 1000  
 rack travel mm : 10.90  
 Tolerance mm : ± 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
 Pressure hPa : 700  
 rack travel mm : 11.05  
 Tolerance mm : ± 0.05

Pressure hPa : -  
 Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500  
 Pressure hPa : 280  
 rack travel mm : 0.45  
 Tolerance mm : ± 0.05

Pressure hPa : 410  
 rack travel mm : 1.40  
 Tolerance mm : ± 0.10

#### Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 220

Check speed 1/min : > 80  
 Check speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
 Rated speed rpm : 800  
 Del. quantity cm³/1000 strokes : 86.0  
 Tolerance cm³/1000 strokes : ± 2.0  
 Check tolerance cm³/1000S. : ± 4.0  
 Spread  
 Tolerance cm³/1000 strokes : 5.0  
 Check tolerance cm³/1000S. : 8.0

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm³/1000 strokes : 53.0  
 Tolerance cm³/1000 strokes : ± 1.0  
 Check tolerance cm³/1000S. : ± 3.0  
 Spread  
 Tolerance cm³/1000 strokes : 3.5  
 Check tolerance cm³/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 13.00  
 Tolerance mm : ± 0.10  
 Del. quantity cm³/1000 strokes : 84.0  
 Tolerance cm³/1000 strokes : ± 7.5  
 Check tolerance cm³/1000S. : ± 10.0

#### LOW IDLE

Rated speed rpm : 300  
 Del. quantity cm³/1000 strokes : 10.0  
 Tolerance cm³/1000 strokes : ± 2.0  
 Check tolerance cm³/1000S. : ± 4.5  
 Spread  
 Tolerance cm³/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 24.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 310

Injection pump  
Pump designation : PES6A95D410RS2772  
EP type number : 9 400 084 018

Governor  
Governor design. : RQV300...1300AB1066  
: 8L  
Governor no. : 9 420 080 279

Cust. part No. :

## Customer-spec. information

Customer : 1483  
Motor : OM 366 LA  
Power KW : 155.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 99.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : + - 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 11.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 4.5

Spred

Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500

guide sleeve

travel mm : 8.55

Tolerance mm : + - 0.05

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : + - 0.25

Rated speed rpm : 500

guide sleeve

travel mm : 2.55

Tolerance mm : + - 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.20

Tolerance mm : + - 0.10

#### GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : + - 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 700

Del. quantity

cm<sup>3</sup>/1000 strokes : 99.0

Tolerance

cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance

cm<sup>3</sup>/1000S. : + - 3.0

Spred

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever

position degree : 109.0

tolerance degree : + - 4.0

#### RATED SPEED

rack travel mm : 10.10

Rated speed rpm : 1365

Tolerance 1/min : + - 5

rack travel mm : 4.00

Rated speed rpm : 1500

Tolerance 1/min : + - 15

rack travel mm : 0.50

Tolerance mm : + - 0.50

Rated speed rpm : 1650

#### LOW IDLE

control lever

position degree : 68.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 7.00

Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 300  
rack travel mm : 0.40  
Tolerance mm : + - 0.10

Pressure hPa : 450  
rack travel mm : 1.05  
Tolerance mm : + - 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 700  
Del. quantity  
cm3/1000 strokes : 87.5  
Tolerance  
cm3/1000 strokes : + - 2.0

Check tolerance  
cm3/1000S. : + - 4.0  
Spred  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 60.5  
Tolerance  
cm3/1000 strokes : + - 1.0  
Check tolerance  
cm3/1000S. : + - 3.0  
Spred  
Tolerance  
cm3/1000 strokes : 3.5  
Check tolerance  
cm3/1000S. : 8.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.70  
Tolerance mm : + - 0.10  
Del. quantity  
cm3/1000 strokes : 84.0  
Tolerance  
cm3/1000 strokes : + - 7.5  
Check tolerance  
cm3/1000S. : + - 10.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm3/1000 strokes : 11.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.5  
Spred  
Tolerance  
cm3/1000 strokes : 5.5  
Check tolerance  
cm3/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 319

Injection pump  
Pump designation : PES6A95D410RS2772  
EP type number : 9 400 084 018

Governor  
Governor design. : RQV300...1400AB1066  
: 10L  
Governor no. : 9 420 080 287

Cust. part No. : 019 074 52 02

## Customer-spec. information

Customer : MBB  
Motor : OM 352 A  
Power KW : 141.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.55  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 78.5

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000s. : + 3.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 300  
 Rack travel in mm : 7.00  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 11.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
 guide sleeve  
 travel mm : 8.55  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.05  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 500  
 guide sleeve  
 travel mm : 2.55  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 750  
 guide sleeve  
 travel mm : 4.20  
 Tolerance mm : + - 0.10

---

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1500  
 Rack travel in mm : 16.50

Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 78.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 3.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
 position degree : 62.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 111.0  
 tolerance degree : + - 4.0

RATED SPEED  
 rack travel mm : 8.50  
 Rated speed rpm : 1465  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1550  
 Tolerance 1/min : + - 15

rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1650

---

##### LOW IDLE

control lever  
 position degree : 67.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 19.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 485

#### TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 9.55  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 10.05  
Tolerance mm : + - 0.05

Rated speed rpm : 1000  
rack travel mm : 9.80  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 10.05  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 170  
rack travel mm : 0.55  
Tolerance mm : + - 0.05

Pressure hPa : 330  
rack travel mm : 1.20  
Tolerance mm : + - 0.10

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
Rated speed rpm : 800  
Del. quantity cm3/1000 strokes : 75.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0  
Spread  
Tolerance cm3/1000 strokes : 5.0  
Check tolerance cm3/1000S. : 8.0

Aneroid pressure hPa : 700  
Rated speed rpm : 1000  
Del. quantity cm3/1000 strokes : 79.0  
Tolerance cm3/1000 strokes : + - 1.5  
Check tolerance cm3/1000S. : + - 4.0  
Spread  
Tolerance cm3/1000 strokes : 5.0  
Check tolerance cm3/1000S. : 8.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 42.0  
Tolerance cm3/1000 strokes : + - 1.0  
Check tolerance cm3/1000S. : + - 3.0  
Spread  
Tolerance cm3/1000 strokes : 3.5  
Check tolerance cm3/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.00  
Tolerance mm : + - 0.10  
Del. quantity cm3/1000 strokes : 80.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 10.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 381

Injection pump  
Pump designation : PES6A100D120RS2868  
EP type number : 9 400 084 037

Governor  
Governor design. : RSV450...1200A0C2289

Governor no. : 9 420 083 304

Cust. part No. : 3927763

## Customer-spec. information

Customer : CUMMINS  
Motor : 6BT  
Power KW : 81.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.90  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

\*NW after s.o.d. : 6.75  
Tolerance : + 0.10  
Check tolerance \*NW : + 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference \* CS : 3.50

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 8.75

Tolerance mm : + 0.05  
 Del. quantity cm<sup>3</sup>/1000 strokes : 76.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0  
 Rated speed rpm : 350  
 Rack travel in mm : 5.60  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 23.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

control lever position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.50  
 Tolerance mm : + 0.20  
 governor spring pre-tension click setting x : 5.75

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure hPa : -  
 Del. quantity cm<sup>3</sup>/1000 strokes : 76.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever position degree : 112.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 7.70  
 Rated speed rpm : 1245  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1310  
 Tolerance 1/min : + 15  
 rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1400

##### LOW IDLE

control lever position degree : 87.0  
 tolerance degree : + 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 5.10  
 Tolerance mm : + 0.10  
 Testing:  
 Rated speed rpm : 350  
 rack travel mm : 5.60  
 Tolerance mm : + 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 505

Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 8.75  
Tolerance mm : + 0.05

Rated speed rpm : 650  
rack travel mm : 9.05  
Tolerance mm : + 0.05

Rated speed rpm : 880  
rack travel mm : 9.05  
Tolerance mm : + 0.05

Rated speed rpm : 1030  
rack travel mm : 8.75  
Tolerance mm : + 0.05

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : -

Rated speed rpm : 650

Del. quantity cm<sup>3</sup>/1000 strokes : 82.0

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.00

Tolerance mm : + 1.00

Del. quantity cm<sup>3</sup>/1000 strokes : 168.0

Tolerance cm<sup>3</sup>/1000 strokes : + 8.0

Check tolerance cm<sup>3</sup>/1000S. : + 11.0

Rated speed rpm : 350

Del. quantity cm<sup>3</sup>/1000 strokes : 23.5

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

---

#### LOW IDLE

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 382

Injection pump  
Pump designation : PES6A100D120RS2869  
EP type number : 9 400 084 038

Governor  
Governor design. : RQV350...1100AB1303R  
Governor no. : 9 420 080 381

Cust. part No. : 3356052

---

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 CTAA 215 hp  
Power KW : 159.0

---

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.60  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

### Start of delivery blocking

\*NW after s.o.d. : 8.50  
Tolerance : + 0.10  
Check tolerance \*NW : + 0.23

Barrel no. : 1

### Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference \* CS : 4.00

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75

Tolerance mm	: + - 0.05
Del. quantity cm <sup>3</sup> /1000 strokes	: 145.5
Tolerance cm <sup>3</sup> /1000 strokes	: + - 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + - 3.0
Spred	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 8.0
Rated speed rpm	: 350
Rack travel in mm	: 5.40
Tolerance mm	: + - 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 17.5
Tolerance cm <sup>3</sup> /1000 strokes	: + - 2.0
Check tolerance cm <sup>3</sup> /1000S.	: + - 4.5
Spred	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.5
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	: 850
guide sleeve travel mm	: 4.75
Tolerance mm	: + - 0.25
Rated speed rpm	: 1050
guide sleeve travel mm	: 5.90
Tolerance mm	: + - 0.10
Rated speed rpm	: 350
guide sleeve travel mm	: 1.45
Tolerance mm	: + - 0.25
Rated speed rpm	: 600

guide sleeve travel mm	: 3.65
Tolerance mm	: + - 0.25
Rated speed rpm	: 1350
guide sleeve travel mm	: 8.35
Tolerance mm	: + - 0.25

##### GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1360
Rack travel in mm	: 16.50
Tolerance mm	: + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure hPa	: 1100
Del. quantity cm <sup>3</sup> /1000 strokes	: 145.5
Tolerance cm <sup>3</sup> /1000 strokes	: + - 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + - 3.0
Spred	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 8.0

##### CONTROL LEVER

control lever position degree	: 55.0
tolerance degree	: + - 4.0
control lever position degree	: 110.0
tolerance degree	: + - 4.0
RATED SPEED	
rack travel mm	: 11.70
Rated speed rpm	: 1170
Tolerance 1/min	: + - 5
rack travel mm	: 4.00
Rated speed rpm	: 1350
Tolerance 1/min	: + - 15
rack travel mm	: 0.50

Tolerance mm : + 0.50  
Rated speed rpm : 1500

#### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 4.0

control lever  
position degree : 13.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.40  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.75  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.75  
Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1100  
rack travel mm : 12.75  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 690

rack travel mm : 2.25  
Tolerance mm : + 0.15

Pressure hPa : 300  
rack travel mm : 0.70  
Tolerance mm : + 0.10

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check speed 1/min : > 80  
Check speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1100  
Rated speed rpm : 800  
Del. quantity cm<sup>3</sup>/1000 strokes : 148.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 82.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity cm<sup>3</sup>/1000 strokes : 168.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 8.0  
Check tolerance cm<sup>3</sup>/1000S. : + 11.0

#### LOW IDLE

Rated speed rpm : 350

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 383

Injection pump  
Pump designation : PES6A95D410RS2772  
EP type number : 9 400 084 018

Governor  
Governor design. : RQV300...1300AB1066  
: 13L  
Governor no. : 9 420 080 332

Cust. part No. : 026 074 53 02

## Customer-spec. information

Customer : MBB  
Motor : OM 366 LA-EURO 1  
Power KW : 147.1

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.45  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 104.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

Rated speed rpm : 300  
  
Rack travel in mm : 7.00  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm : + - 0.05  
  
Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm : + - 0.25  
  
Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm : + - 0.25  
  
Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + - 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500  
  
Rack travel in mm : 16.50  
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 104.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + - 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : + - 4.0

control lever  
position degree : 109.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : 10.60  
Rated speed rpm : 1360  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1505  
Tolerance 1/min : + - 15

rack travel mm : 0.50  
Tolerance mm : + - 0.50  
Rated speed rpm : 1650

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + - 4.0

control lever  
position degree : 19.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 7.00  
 Tolerance mm : + 0.10  
  
 Rated speed rpm : 100  
  
 CRT mm min. : > 8.00  
  
 Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 11.45  
 Tolerance mm : + 0.05  
  
 Rated speed rpm : 800  
 rack travel mm : 11.45  
 Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
 Pressure hPa : 900  
 rack travel mm : 11.45  
 Tolerance mm : + 0.05

Pressure hPa : -  
 Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500  
  
 Pressure hPa : 240  
 rack travel mm : 0.60  
 Tolerance mm : + 0.10  
  
 Pressure hPa : 520  
 rack travel mm : 1.65  
 Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 220

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900  
 Rated speed rpm : 800  
 Del. quantity cm<sup>3</sup>/1000 strokes : 94.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 48.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 12.90  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 76.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 7.5  
 Check tolerance cm<sup>3</sup>/1000S. : + 10.0

#### LOW IDLE

Rated speed rpm : 300  
 Del. quantity cm<sup>3</sup>/1000 strokes : 11.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 384

Injection pump  
Pump designation : PES4A95D410RS2887  
EP type number : 9 400 084 040

Governor  
Governor design. : RQV300...1300AB1307L  
Governor no. : 9 420 080 385

Cust. part No. : 0260745402

### Customer-spec. information

Customer : MBB  
Motor : OM 364A/ EURO I  
Power KW : 81.0

### TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

Rated speed rpm : 300  
 Rack travel in mm : 8.20  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

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(B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
 guide sleeve travel mm : 8.55  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 300  
 guide sleeve travel mm : 1.05  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 500  
 guide sleeve travel mm : 2.55  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 750  
 guide sleeve travel mm : 4.20  
 Tolerance mm : + - 0.10

---

GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1500  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure hPa : 700  
 Del. quantity cm<sup>3</sup>/1000 strokes : 85.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever position degree : 59.0  
 tolerance degree : + - 4.0

control lever position degree : 110.0  
 tolerance degree : + - 4.0

RATED SPEED  
 rack travel mm : 10.00  
 Rated speed rpm : 1345  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1485  
 Tolerance 1/min : + - 15

rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1640

---

LOW IDLE

control lever position degree : 71.0  
 tolerance degree : + - 4.0

control lever position degree : 22.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 8.20  
 Tolerance mm : + - 0.10

Rated speed rpm : 100  
 CRT mm min. : > 9.50  
 Rated speed rpm : 415

#### TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 11.05  
 Tolerance mm : + - 0.05  
  
 Rated speed rpm : 640  
 rack travel mm : 11.95  
 Tolerance mm : + - 0.05  
  
 Rated speed rpm : 950  
 rack travel mm : 11.35  
 Tolerance mm : + - 0.05  
  
 Rated speed rpm : 800  
 rack travel mm : 11.65  
 Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 700  
 rack travel mm : 11.95  
 Tolerance mm : + - 0.05  
  
 Pressure hPa : -  
 Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500  
  
 Pressure hPa : 240  
 rack travel mm : 0.35  
 Tolerance mm : + - 0.05  
  
 Pressure hPa : 350  
 rack travel mm : 1.10  
 Tolerance mm : + - 0.10

##### Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 250  
  
 Check speed 1/min : > 80

Check speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
 Rated speed rpm : 800  
 Del. quantity cm<sup>3</sup>/1000 strokes : 81.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 57.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 14.20  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 82.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 7.5  
 Check tolerance cm<sup>3</sup>/1000S. : + - 10.0

#### LOW IDLE

Rated speed rpm : 300  
 Del. quantity cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 385

Injection pump  
Pump designation : PES6A95D410RS2886  
EP type number : 9 400 084 039

Governor  
Governer design. : RQV300...1300AB1306L  
Governer no. : 9 420 080 384

Cust. part No. : 0260745502

## Customer-spec. information

Customer : MBB  
Motor : OM 366 A  
Power KW : 125.0

## TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + - 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 3.00  
Tolerance mm : + - 0.05  
Check  
tolerance mm : + - 0.10

Rack travel in mm : 10.50  
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.85  
Tolerance mm : + - 0.05

Del. quantity  
cm³/1000 strokes : 83.0

Tolerance  
cm³/1000 strokes : + - 1.0

Check tolerance  
cm³/1000s. : + - 3.0

Spread

Tolerance  
cm³/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 300  
  
Rack travel in mm : 8.00  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 10.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm : + - 0.05  
  
Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm : + - 0.25  
  
Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm : + - 0.25  
  
Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + - 0.10

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500  
  
Rack travel in mm : 16.50  
Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : + - 4.0

control lever  
position degree : 109.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : 9.80  
Rated speed rpm : 1355  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1485  
Tolerance 1/min : + - 15

rack travel mm : 0.50  
Tolerance mm : + - 0.50  
Rated speed rpm : 1600

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + - 4.0

control lever  
position degree : 22.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 8.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 8.70

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 10.85  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 11.75  
Tolerance mm : + - 0.05

Rated speed rpm : 1000  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

Rated speed rpm : 600  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250  
rack travel mm : 0.60  
Tolerance mm : + - 0.10

Pressure hPa : 450  
rack travel mm : 1.75  
Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check speed 1/min : > 80  
Check speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : 900  
Rated speed rpm : 700  
Del. quantity cm3/1000 strokes : 82.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0

##### Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 42.5  
Tolerance cm3/1000 strokes : + - 1.0  
Check tolerance cm3/1000S. : + - 3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.80  
Tolerance mm : + - 0.10  
Del. quantity cm3/1000 strokes : 78.0  
Tolerance cm3/1000 strokes : + - 7.5  
Check tolerance cm3/1000S. : + - 10.0

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity cm3/1000 strokes : 10.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.5  
Spread  
Tolerance cm3/1000 strokes : 5.5  
Check tolerance cm3/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 386

Injection pump  
Pump designation : PES6A95D410RS2812  
EP type number : 9 400 084 028

Governor  
Governor design. : RQV350...1300AB1304L  
Governor no. : 9 420 080 382

Cust. part No. :

## Customer-spec. information

Customer : MWM  
Motor : 6.10 T  
Power KW : 124.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.80  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 2.00

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 91.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000S. : + 3.0

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 350  
 Rack travel in mm : 5.80  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 3.95  
 Tolerance mm : ± 0.25

Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 7.20  
 Tolerance mm : ± 0.10

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.05  
 Tolerance mm : ± 0.25

Rated speed rpm : 550  
 guide sleeve  
 travel mm : 2.75  
 Tolerance mm : ± 0.25

Rated speed rpm : 1500  
 guide sleeve  
 travel mm : 8.55  
 Tolerance mm : ± 0.25

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1485  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 91.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
 position degree : 58.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 113.0  
 tolerance degree : ± 4.0

**RATED SPEED**  
 rack travel mm : 10.60  
 Rated speed rpm : 1418  
 Tolerance 1/min : ± 8

rack travel mm : 4.00  
 Rated speed rpm : 1550  
 Tolerance 1/min : ± 15

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1700

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + - 4.0

control lever  
position degree : 13.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.80  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 400

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.65  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 12.05  
Tolerance mm : + - 0.05

Rated speed rpm : 880  
rack travel mm : 12.05  
Tolerance mm : + - 0.05

Rated speed rpm : 1260  
rack travel mm : 11.65  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 12.05  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 470

rack travel mm : 1.75  
Tolerance mm : + - 0.15

Pressure hPa : 270  
rack travel mm : 0.60  
Tolerance mm : + - 0.10

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 800  
Del. quantity  
cm3/1000 strokes : 93.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 51.0  
Tolerance  
cm3/1000 strokes : + - 1.5  
Check tolerance  
cm3/1000S. : + - 3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm3/1000 strokes : 155.0  
Tolerance  
cm3/1000 strokes : + - 8.0  
Check tolerance  
cm3/1000S. : + - 11.0

#### LOW IDLE

Rated speed rpm : 350

Det. quantity  
cm<sup>3</sup>/1000 strokes : 12.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 387

Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -2  
EP type number : 9 410 230 028

Governor  
Governor design. : RQV450...1150AB1305R  
Governor no. : 9 420 080 383

Cust. part No. : 3355883

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 CT - 8.3 L  
Power KW : 126.8

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## Start of delivery blocking

\*NW after s.o.d. : 11.00  
Tolerance : + 0.10  
Check  
tolerance \*NW : + 0.23

Barrel no. : 1

## Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.45

Tolerance mm	: + 0.05
Del. quantity cm <sup>3</sup> /1000 strokes	: 92.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 3.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 8.0
Rated speed rpm	: 450
Rack travel in mm	: 4.90
Tolerance mm	: + 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	: 11.5
Tolerance cm <sup>3</sup> /1000 strokes	: + 2.0
Check tolerance cm <sup>3</sup> /1000S.	: + 4.5
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.5
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm	: 900
guide sleeve travel mm	: 5.65
Tolerance mm	: + 0.25
Rated speed rpm	: 1150
guide sleeve travel mm	: 7.50
Tolerance mm	: + 0.10
Rated speed rpm	: 400
guide sleeve travel mm	: 1.85
Tolerance mm	: + 0.25
Rated speed rpm	: 650

guide sleeve travel mm	: 4.35
Tolerance mm	: + 0.25
Rated speed rpm	: 1300
guide sleeve travel mm	: 8.95
Tolerance mm	: + 0.25

##### GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1245
Rack travel in mm	: 16.50
Tolerance mm	: + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure hPa	: -
Del. quantity cm <sup>3</sup> /1000 strokes	: 92.0
Tolerance cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance cm <sup>3</sup> /1000S.	: + 3.0
Spread	
Tolerance cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance cm <sup>3</sup> /1000S.	: 8.0

##### CONTROL LEVER

control lever position degree	: 58.0
tolerance degree	: + 4.0
control lever position degree	: 113.0
tolerance degree	: + 4.0
RATED SPEED	
rack travel mm	: 9.40
Rated speed rpm	: 1195
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1300
Tolerance 1/min	: + 15
rack travel mm	: 0.50

Tolerance mm : + 0.50  
Rated speed rpm : 1450

---

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + 4.0

control lever  
position degree : 16.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 450  
rack travel mm : 4.90  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 11.00

Rated speed rpm : 500

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 10.45  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 10.75  
Tolerance mm : + 0.05

Rated speed rpm : 850  
rack travel mm : 10.75  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 10.45  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 300

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 320

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 91.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 11.0

---

#### LOW IDLE

Rated speed rpm : 450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 388

Injection pump  
Pump designation : PES6A95D410RS2886  
EP type number : 9 400 084 039

Governor  
Governor design. : RQV300...1300AB1306L  
Governor no. : 9 420 080 384

Cust. part No. : 0260746702

---

Customer-spec. information  
Customer : MBB  
Motor : OM 366A EURO I  
Power KW : 125.0

---

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : Ø 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.85  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.00

Tolerance mm : + 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 10.5

Tolerance

cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance

cm<sup>3</sup>/1000s. : + 4.5

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance

cm<sup>3</sup>/1000s. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500

guide sleeve

travel mm : 8.55

Tolerance mm : + 0.05

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : + 0.25

Rated speed rpm : 500

guide sleeve

travel mm : 2.55

Tolerance mm : + 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.20

Tolerance mm : + 0.10

#### GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : + 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 900

Del. quantity

cm<sup>3</sup>/1000 strokes : 83.0

Tolerance

cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance

cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000s. : 8.0

#### CONTROL LEVER

control lever

position degree : 60.0

tolerance degree : + 4.0

control lever

position degree : 109.0

tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 9.80

Rated speed rpm : 1355

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1485

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1600

#### LOW IDLE

control lever

position degree : 70.0

tolerance degree : + 4.0

control lever

position degree : 22.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 8.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100  
CRT mm min. : > 8.70

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 10.85  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 11.75  
Tolerance mm : + - 0.05

Rated speed rpm : 1000  
rack travel mm : 11.15  
Tolerance mm : + - 0.05

Rated speed rpm : 500  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 250  
rack travel mm : 0.60  
Tolerance mm : + - 0.10

Pressure hPa : 450  
rack travel mm : 1.75  
Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check speed 1/min : > 80  
Check speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900  
Rated speed rpm : 700  
Del. quantity cm3/1000 strokes : 82.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 42.5  
Tolerance cm3/1000 strokes : + - 1.0  
Check tolerance cm3/1000S. : + - 3.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.80  
Tolerance mm : + - 0.10  
Del. quantity cm3/1000 strokes : 78.0  
Tolerance cm3/1000 strokes : + - 7.5  
Check tolerance cm3/1000S. : + - 10.0

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity cm3/1000 strokes : 10.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.5  
Spread  
Tolerance cm3/1000 strokes : 5.5  
Check tolerance cm3/1000S. : 9.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 389

Injection pump  
Pump designation : PES6A95D410RS2812  
EP type number : 9 400 084 028

Governor  
Governor design. : RQV350...1300AB1309L  
Governor no. : 9 420 080 386

Cust. part No. :

### Customer-spec. information

Customer : MWM  
Motor : 6.10 TCA  
Power KW : 138.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

### Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 2.00

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.95  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 99.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 350  
 Rack travel in mm : 5.70  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 3.95  
 Tolerance mm : + - 0.25

Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 7.20  
 Tolerance mm : + - 0.10

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.05  
 Tolerance mm : + - 0.25

Rated speed rpm : 550  
 guide sleeve  
 travel mm : 2.75  
 Tolerance mm : + - 0.25

Rated speed rpm : 1500  
 guide sleeve  
 travel mm : 8.55  
 Tolerance mm : + - 0.25

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1490  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 99.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### CONTROL LEVER

control lever  
 position degree : 59.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 114.0  
 tolerance degree : + - 4.0

**RATED SPEED**  
 rack travel mm : 10.90  
 Rated speed rpm : 1425  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1570  
 Tolerance 1/min : + - 15

rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1730

#### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + - 4.0

control lever  
position degree : 12.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.70  
Tolerance mm : + - 0.10

Rated speed rpm : 100  
CRT mm min. : > 8.50  
Rated speed rpm : 400

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.95  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 11.95  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.95  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 380  
rack travel mm : 1.80  
Tolerance mm : + - 0.10  
Pressure hPa : 190  
rack travel mm : 0.55  
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check speed 1/min : > 80  
Check speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900  
Rated speed rpm : 300  
Del. quantity cm<sup>3</sup>/1000 strokes : 94.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 8.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 51.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 3.0  
Spread Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 8.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 11.0

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 390

injection pump  
Pump designation : PES6A95D410RS2886  
EP type number : 9 400 084 039

Governor  
Governor design. : RQV300...1300AB1310L  
Governor no. : 9 420 080 388

Cust. part No. : 0260746902

### Customer-spec. information

Customer : MBB  
Motor : OM 366LA/EURO I  
Power KW : 150.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.85  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 300  
  
Rack travel in mm : 8.10  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm : + 0.05  
  
Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm : + 0.25  
  
Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm : + 0.25  
  
Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + 0.10

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500  
  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree : + 4.0

control lever  
position degree : 110.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 10.80  
Rated speed rpm : 1385  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1530  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1650

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

control lever  
position degree : 21.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 8.10  
Tolerance mm : + - 0.10

Rated speed rpm : 100  
CRT mm min. : > 9.70  
Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

Rated speed rpm : 1125  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 280  
rack travel mm : 0.60  
Tolerance mm : + - 0.10

Pressure hPa : 430  
rack travel mm : 1.55  
Tolerance mm : + - 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 700  
Del. quantity  
cm3/1000 strokes : 88.5  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.0  
Spread  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 8.0

Aneroid pressure  
hPa : 900  
Rated speed rpm : 800  
Del. quantity  
cm3/1000 strokes : 90.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.0  
Spread  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 8.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 48.0  
Tolerance  
cm3/1000 strokes : + - 1.0  
Check tolerance  
cm3/1000S. : + - 3.0  
Spread  
Tolerance  
cm3/1000 strokes : 3.5  
Check tolerance  
cm3/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.90

Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 93.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 10.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 391

Injection pump  
Pump designation : PES6A95D410RS2886  
EP type number : 9 400 084 039

Governor  
Governor design. : RQV300...1300AB1310L  
Governor no. : 9 420 080 388

Cust. part No. : 0260745802

## Customer-spec. information

Customer : MBB  
Motor : OM 366LA/EURO I  
Power KW : 150.0

## TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.85  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 300  
Rack travel in mm : 8.10  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm : + 0.05  
Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm : + 0.25  
Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm : + 0.25  
Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + 0.10

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree : + 4.0

control lever  
position degree : 110.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 10.80  
Rated speed rpm : 1385  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1530  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1650

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

control lever  
position degree : 21.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 8.10  
Tolerance mm : + - 0.10

Rated speed rpm : 100  
CRT mm min. : > 9.70  
Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

Rated speed rpm : 1125  
rack travel mm : 11.85  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 280  
rack travel mm : 0.60  
Tolerance mm : + - 0.10

Pressure hPa : 430  
rack travel mm : 1.55  
Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 250

Check speed 1/min : > 80  
Check speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900  
Rated speed rpm : 700  
Del. quantity cm3/1000 strokes : 88.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0  
Spread  
Tolerance cm3/1000 strokes : 5.0  
Check tolerance cm3/1000S. : 8.0

Aneroid pressure hPa : 900  
Rated speed rpm : 800  
Del. quantity cm3/1000 strokes : 90.0  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0  
Spread  
Tolerance cm3/1000 strokes : 5.0  
Check tolerance cm3/1000S. : 8.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 48.0  
Tolerance cm3/1000 strokes : + - 1.0  
Check tolerance cm3/1000S. : + - 3.0  
Spread  
Tolerance cm3/1000 strokes : 3.5  
Check tolerance cm3/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.90

Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 93.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 10.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 392

Injection pump  
Pump designation : PES6A95D320RS2806  
EP type number : 0 410 896 898

Governor  
Governor design. : RSV375...1150A0C830R  
Governor no. : 9 420 033 305

Cust. part No. : 82085500

**Customer-spec. information**

Customer : VALMET  
Motor : 620 DS  
Power KW : 125.0

**TEST BENCH REQUIREMENTS**

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outer diameter : 6.0

x inside diameter : 2.0  
x Length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.75  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.00

**BASIC SETTING**

Rated speed rpm : 1150

Rack travel in mm : 12.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spred \_\_\_\_\_  
 Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0  
 \_\_\_\_\_  
 Rated speed rpm : 375  
 Rack travel in mm : 5.50  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm3/1000 strokes : 12.5  
 Tolerance  
 cm3/1000 strokes : + - 2.0  
 Check tolerance  
 cm3/1000S. : + - 4.5  
 Spred  
 Tolerance  
 cm3/1000 strokes : 5.5  
 Check tolerance  
 cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35  
 governor spring  
 pre-tension  
 click setting x : 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm3/1000 strokes : 95.0  
 Tolerance  
 cm3/1000 strokes : + - 1.0  
 Check tolerance  
 cm3/1000S. : + - 3.0  
 Spred

Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0

#### CONTROL LEVER

control lever  
 position degree : 37.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 87.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 11.70  
 Rated speed rpm : 1175  
 Tolerance 1/min : + - 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1255  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1350

#### LOW IDLE

control lever  
 position degree : 66.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 16.0  
 tolerance degree : + - 4.0  
 Setting point w/out bumper spring  
 Rated speed rpm : 375  
 rack travel mm : 5.00  
 Tolerance mm : + - 0.10

#### Testing:

Rated speed rpm : 375  
 rack travel mm : 5.50  
 Tolerance mm : + - 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 465  
 Tolerance 1/min : + - 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 13.85  
Tolerance mm : + - 0.05

Rated speed rpm : 750  
rack travel mm : 13.85  
Tolerance mm : + - 0.05

Rated speed rpm : 1100  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm3/1000 strokes : 103.5  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm3/1000 strokes : 196.0  
Tolerance  
cm3/1000 strokes : + - 7.5  
Check tolerance  
cm3/1000S. : + - 10.0

---

#### LOW IDLE

Rated speed rpm : 375

Del. quantity  
cm3/1000 strokes : 12.5  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.5  
Spred  
Tolerance  
cm3/1000 strokes : 5.5  
Check tolerance  
cm3/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 394

Injection pump  
Pump designation : PES6A95D320RS2896  
EP type number : 9 400 084 041

Governor  
Governor design. : RSV375...1150AOC834R  
Governor no. : 9 420 083 306

Cust. part No. : 82085600

---

Customer-spec. information  
Customer : VALMET  
Motor : 620 DS  
Power KW : 110.0

---

### TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.70  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 4.20

### BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.05  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 87.5

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000s. : + 3.0

Spreed \_\_\_\_\_  
 Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0  
 \_\_\_\_\_  
 Rated speed rpm : 375  
 Rack travel in mm : 4.70  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm3/1000 strokes : 16.0  
 Tolerance  
 cm3/1000 strokes : + - 2.0  
 Check tolerance  
 cm3/1000S. : + - 4.5  
 Spreed  
 Tolerance  
 cm3/1000 strokes : 5.5  
 Check tolerance  
 cm3/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.65  
 Tolerance mm : + - 0.35

governor spring  
 pre-tension  
 click setting x : 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm3/1000 strokes : 87.5  
 Tolerance  
 cm3/1000 strokes : + - 1.0  
 Check tolerance  
 cm3/1000S. : + - 3.0  
 Spreed

Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0

#### CONTROL LEVER

control lever  
 position degree : 37.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 87.0  
 tolerance degree : + - 4.0

**RATED SPEED**  
 rack travel mm : 10.00  
 Rated speed rpm : 1185  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1245  
 Tolerance 1/min : + - 15

rack travel mm : 0.85  
 Tolerance mm : + - 0.55  
 Rated speed rpm : 1360

#### LOW IDLE

control lever  
 position degree : 66.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 16.0  
 tolerance degree : + - 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 375  
 rack travel mm : 4.20  
 Tolerance mm : + - 0.10

#### Testing:

Rated speed rpm : 375  
 rack travel mm : 4.70  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 450  
 Tolerance 1/min : + - 30

Rated speed rpm : 100  
CRT mm min. : > 19.00

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 11.05  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 11.45  
Tolerance mm : + - 0.05

Rated speed rpm : 930  
rack travel mm : 11.45  
Tolerance mm : + - 0.05

Rated speed rpm : 1030  
rack travel mm : 11.05  
Tolerance mm : + - 0.05

#### Start interlock

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm3/1000 strokes : 86.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + - 1.00  
Del. quantity  
cm3/1000 strokes : 196.0  
Tolerance  
cm3/1000 strokes : + - 8.0  
Check tolerance  
cm3/1000S. : + - 11.0

---

#### LOW IDLE

Rated speed rpm : 375

Del. quantity  
cm3/1000 strokes : 16.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 4.5  
Spred  
Tolerance  
cm3/1000 strokes : 5.5  
Check tolerance  
cm3/1000S. : 9.0

---

End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 395

Injection pump  
Pump designation : PES6A95D410RS2886  
EP type number : 9 400 084 039

Governor  
Governor design. : RQV300...1300AB1312L  
Governor no. : 9 420 080 391

Cust. part No. : 0260749702

**Customer-spec. information**

Customer : MBB  
Motor : OM 366LA/EURO I  
Power KW : 170.0

**TEST BENCH REQUIREMENTS**

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

**BASIC SETTING**

Rated speed rpm : 1300

Rack travel in mm : 12.25  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 109.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000s. : + 3.0

Spread

Tolerance  
cm³/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 300  
  
Rack travel in mm : 7.50  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm : + 0.05  
  
Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm : + 0.25  
  
Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm : + 0.25  
  
Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + 0.10

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500  
  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

##### CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : + 4.0  
  
control lever  
position degree : 110.0  
tolerance degree : + 4.0  
  
RATED SPEED  
rack travel mm : 11.20  
Rated speed rpm : 1350  
Tolerance 1/min : + 5  
  
rack travel mm : 4.00  
Rated speed rpm : 1515  
Tolerance 1/min : + 15  
  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1650

---

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0  
  
control lever  
position degree : 20.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 7.50  
Tolerance mm : + - 0.10

Rated speed rpm : 100  
CRT mm min. : > 8.80

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

Rated speed rpm : 700  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

Rated speed rpm : 950  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

Rated speed rpm : 1240  
rack travel mm : 12.25  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 660  
rack travel mm : 2.40  
Tolerance mm : + - 0.10

Pressure hPa : 410  
rack travel mm : 1.35  
Tolerance mm : + - 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200  
Rated speed rpm : 700  
Del. quantity cm3/1000 strokes : 111.0  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0  
Spread Tolerance cm3/1000 strokes : 5.0  
Check tolerance cm3/1000S. : 8.0

Aneroid pressure hPa : 1200  
Rated speed rpm : 950  
Del. quantity cm3/1000 strokes : 111.5  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0  
Spread Tolerance cm3/1000 strokes : 5.0  
Check tolerance cm3/1000S. : 8.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 54.0  
Tolerance cm3/1000 strokes : + - 1.0  
Check tolerance cm3/1000S. : + - 3.0  
Spread Tolerance cm3/1000 strokes : 3.5  
Check tolerance cm3/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.00

Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 10.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 085 396

Injection pump  
Pump designation : PES6A95D410RS2886  
EP type number : 9 400 084 039

Governor  
Governor design. : RQV300...1300AB1312L  
Governor no. : 9 420 030 391

Cust. part No. : 0260749602

### Customer-spec. information

Customer : MBB  
Motor : OM 366LA/EURO I  
Power KW : 170.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.00  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 300  
  
Rack travel in mm : 7.50  
Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55  
Tolerance mm : + - 0.05  
  
Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05  
Tolerance mm : + - 0.25  
  
Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55  
Tolerance mm : + - 0.25  
  
Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20  
Tolerance mm : + - 0.10

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500  
  
Rack travel in mm : 16.50  
Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

##### CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : + - 4.0

control lever  
position degree : 110.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : 11.20  
Rated speed rpm : 1350  
Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1515  
Tolerance 1/min : + - 15

rack travel mm : 0.50  
Tolerance mm : + - 0.50  
Rated speed rpm : 1650

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + - 4.0

control lever  
position degree : 20.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 7.50  
 Tolerance mm : + - 0.10  
  
 Rated speed rpm : 100  
  
 CRT mm min. : > 8.80  
  
 Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 12.25  
 Tolerance mm : + - 0.05  
  
 Rated speed rpm : 700  
 rack travel mm : 12.75  
 Tolerance mm : + - 0.05  
  
 Rated speed rpm : 950  
 rack travel mm : 12.75  
 Tolerance mm : + - 0.05  
  
 Rated speed rpm : 1240  
 rack travel mm : 12.25  
 Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
 Pressure hPa : 1200  
 rack travel mm : 12.75  
 Tolerance mm : + - 0.05

Pressure hPa : -  
 Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500  
  
 Pressure hPa : 660  
 rack travel mm : 2.40  
 Tolerance mm : + - 0.10  
  
 Pressure hPa : 410  
 rack travel mm : 1.35  
 Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 220

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 700  
 Del. quantity  
 cm3/1000 strokes : 111.0  
 Tolerance  
 cm3/1000 strokes : + - 2.0  
 Check tolerance  
 cm3/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 5.0  
 Check tolerance  
 cm3/1000S. : 8.0

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 950  
 Del. quantity  
 cm3/1000 strokes : 111.5  
 Tolerance  
 cm3/1000 strokes : + - 2.0  
 Check tolerance  
 cm3/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 5.0  
 Check tolerance  
 cm3/1000S. : 8.0

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm3/1000 strokes : 54.0  
 Tolerance  
 cm3/1000 strokes : + - 1.0  
 Check tolerance  
 cm3/1000S. : + - 3.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 3.5  
 Check tolerance  
 cm3/1000S. : 8.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 15.00

Tolerance mm : + - 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 10.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 305

Injection pump  
Pump designation : PES6P110A720RS3145  
EP type number : 9 400 087 033

Governor  
Governor design. : RQV350...1300PA748  
Governor no. : 9 420 080 193

Cust. part No. :

---

Customer-spec. information  
Customer : FORD  
Motor : 6,6L TC  
Power KW : 123.0

---

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.30  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 3.75

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 95.0

Tolerance  
cm³/1000 strokes : + 1.5

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 350

Rack travel in mm : 7.00  
Tolerance mm : + 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 12.5  
Tolerance

cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance

cm<sup>3</sup>/1000S. : + 5.0  
Spred

Tolerance cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance

cm<sup>3</sup>/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 500

guide sleeve travel mm : 2.50  
Tolerance mm : + 0.20

Rated speed rpm : 1300

guide sleeve travel mm : 7.25  
Tolerance mm : + 0.05

Rated speed rpm : 1000

guide sleeve travel mm : 5.15  
Tolerance mm : + 0.15

Rated speed rpm : 800

guide sleeve travel mm : 4.15  
Tolerance mm : + 0.15

Rated speed rpm : 350

guide sleeve travel mm : 0.95

Tolerance mm : + 0.35

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1350

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure hPa : -

Del. quantity cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance

cm<sup>3</sup>/1000S. : + 4.0  
Spred

Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance

cm<sup>3</sup>/1000S. : 7.5

##### CONTROL LEVER

control lever position degree : 64.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 10.60  
Rated speed rpm : 1365  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1485  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1600

##### LOW IDLE

control lever position degree : 16.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 7.00  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 610  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 10.00

Rated speed rpm : 405

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.65  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 11.65  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 230  
Rated speed rpm : < 290

Check speed 1/min : > 210  
Check speed 1/min : < 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm3/1000 strokes : 93.5  
Tolerance  
cm3/1000 strokes : + 2.0  
Check tolerance  
cm3/1000s. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50

Del. quantity  
cm3/1000 strokes : 115.0  
Tolerance  
cm3/1000 strokes : + 10.0  
Check tolerance  
cm3/1000s. : + 14.0

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm3/1000 strokes : 12.5  
Tolerance  
cm3/1000 strokes : + 2.5  
Check tolerance  
cm3/1000s. : + 5.0  
Spred  
Tolerance  
cm3/1000 strokes : 4.5  
Check tolerance  
cm3/1000s. : 7.5

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 308

Injection pump  
Pump designation : PESP110A720RS479  
EP type number : 9 400 087 040

Governor  
Governor design. : RQ300/1050PA718-1  
Governor no. : 9 420 080 187

Cust. part No. : 3450749401

## Customer-spec. information

Customer : MBB  
Motor : OM355-5 A  
Power KW : 170.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + - 1.5

Test lines : 1 680 750 004

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 3.40  
Tolerance mm : + - 0.05  
Check tolerance mm : + - 0.10

Rack travel in mm : 10.50  
Tolerance mm : + - 1.50  
Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288  
Tolerance : + - 0.50  
Check tolerance °NW : + - 0.75

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.25  
Tolerance mm : + - 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 162.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000s. : + - 4.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
guide sleeve  
travel mm : 6.85  
Tolerance mm : ± 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.40  
Tolerance mm : ± 0.20

Rated speed rpm : 600  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.20  
Tolerance mm : ± 0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 9.75  
Tolerance mm : ± 0.25

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

##### CONTROL LEVER

control lever  
position degree : 34.0  
tolerance degree : ± 4.0

control lever  
position degree : 96.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 11.20  
Rated speed rpm : 1103  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1165  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : ± 4.0

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

**Testing:**

Rated speed rpm : 300  
 rack travel mm : 6.50  
 Tolerance mm : + - 0.10

rack travel mm : 2.00  
 Rated speed rpm : 395  
 Tolerance 1/min : + - 20

Rated speed rpm : 100  
 CRT mm min. : > 8.50

**TORQUE CONTROL**

Rated speed rpm : 1050  
 rack travel mm : 12.25  
 Tolerance mm : + - 0.05

Rated speed rpm : 600  
 rack travel mm : 13.15  
 Tolerance mm : + - 0.05

Rated speed rpm : 900  
 rack travel mm : 12.85  
 Tolerance mm : + - 0.15

**ANEROID/ALITITUDE COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
 Pressure hPa : 700  
 rack travel mm : 13.15  
 Tolerance mm : + - 0.05

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 10.35  
 Tolerance mm : + - 0.05

**MEASUREMENT**

Rated speed rpm : 500  
 Pressure hPa : 250  
 rack travel mm : 11.20  
 Tolerance mm : + - 0.10

Pressure hPa : 400  
 rack travel mm : 12.45  
 Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 110  
 Rated speed rpm : < 230

Check speed 1/min : > 90  
 Check speed 1/min : < 270

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure hPa : 700  
 Rated speed rpm : 600  
 Del. quantity cm<sup>3</sup>/1000 strokes : 179.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure hPa : 700  
 Rated speed rpm : 900  
 Del. quantity cm<sup>3</sup>/1000 strokes : 176.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 114.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
 rack travel mm : 13.80  
 Tolerance mm : + - 0.50  
 Del. quantity cm<sup>3</sup>/1000 strokes : 160.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 10.0

**LOW IDLE**

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.5  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 319

Injection pump  
Pump designation : PE6P110A720RS371-1  
EP type number : 0 411 816 166

Governor  
Governor design. : RQV300...1050PA747  
Governor no. : 9 420 080 195

Cust. part No. :

### Customer-spec. information

Customer : MBB  
Motor : OM 355 A  
Power KW : 210.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 004

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check tolerance \*NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 300  
 Rack travel in mm : 6.00  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

#### (E) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 5.65  
 Tolerance mm : + - 0.15  
 Rated speed rpm : 1070  
 guide sleeve  
 travel mm : 8.55  
 Tolerance mm : + - 0.05  
 Rated speed rpm : 270  
 guide sleeve  
 travel mm : 1.00  
 Tolerance mm : + - 0.20  
 Rated speed rpm : 450  
 guide sleeve  
 travel mm : 2.95  
 Tolerance mm : + - 0.15

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1070  
 Rack travel in mm : 16.50

Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 162.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### CONTROL LEVER

control lever  
 position degree : 67.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 103.0  
 tolerance degree : + - 4.0

RATED SPEED  
 rack travel mm : 10.50  
 Rated speed rpm : 1095  
 Tolerance 1/min : + - 5

rack travel mm : 4.00  
 Rated speed rpm : 1165  
 Tolerance 1/min : + - 15

rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
 position degree : 52.0  
 tolerance degree : + - 4.0

control lever  
 position degree : 16.0  
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.60

Rated speed rpm : 305

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.55  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 11.55  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 230

Check speed 1/min : > 80  
Check speed 1/min : < 270

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 334

Injection pump  
Pump designation : PES6P110A720RS3149  
EP type number : 9 400 087 045

Governor  
Governor design. : RQV350...1300PA772  
Governor no. : 9 420 080 209

Cust. part No. :

Customer-spec. information  
Customer : FORD  
Motor : 6,6L TC  
Power KW : 121.4

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.30  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.15  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350  
 Rack travel in mm : 7.30  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 2.50  
 Tolerance mm : + 0.20  
 Rated speed rpm : 1300  
 guide sleeve  
 travel mm : 7.25  
 Tolerance mm : + 0.05  
 Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 5.15  
 Tolerance mm : + 0.15  
 Rated speed rpm : 800  
 guide sleeve  
 travel mm : 4.15  
 Tolerance mm : + 0.15  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 0.95  
 Tolerance mm : + 0.35

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1350  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 106.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 65.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 12.10  
 Rated speed rpm : 1365  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1520  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1650

##### LOW IDLE

control lever  
 position degree : 13.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350

rack travel mm : 7.30  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 630  
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 405

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.15  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 13.15  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.15  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.65  
Tolerance mm : + - 0.05

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 500  
rack travel mm : 12.10  
Tolerance mm : + - 0.10

Pressure hPa : 700  
rack travel mm : 12.75  
Tolerance mm : + - 0.05

#### Start interlock

Rated speed rpm : > 230  
Rated speed rpm : < 290

Check speed 1/min : > 210

Check speed 1/min : < 310

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 800  
Del. quantity cm3/1000 strokes : 104.0  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 77.5  
Tolerance cm3/1000 strokes : + - 1.0  
Check tolerance cm3/1000S. : + - 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity cm3/1000 strokes : 110.0  
Tolerance cm3/1000 strokes : + - 10.0  
Check tolerance cm3/1000S. : + - 14.0

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity cm3/1000 strokes : 18.0  
Tolerance cm3/1000 strokes : + - 2.0  
Check tolerance cm3/1000S. : + - 4.5  
Speed Tolerance cm3/1000 strokes : 3.5  
Check tolerance cm3/1000S. : 5.5

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 337

Injection pump  
Pump designation : PES6P110A720RS3150  
EP type number : 9 400 087 046

Governor  
Governor design. : RQV350...1300PA776  
Governor no. : 9 420 080 212

Cust. part No. :

## Customer-spec. information

Customer : FORD  
Motor : 7,8 L-TC  
Power KW : 136.2

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.30  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

Beginning of delivery difference  
and maximum rack  
travel : 10.50  
Tolerance mm : + 1.50  
Difference ° CS : 2.50

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 3.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 7.50  
Tolerance mm : + - 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 23.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0

Check tolerance cm<sup>3</sup>/1000S. : + - 4.5

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance cm<sup>3</sup>/1000S. : 5.5

Tolerance mm : + - 0.35

#### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1350

Rack travel in mm : 16.50  
Tolerance mm : + - 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure hPa : 600

Del. quantity cm<sup>3</sup>/1000 strokes : 124.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance cm<sup>3</sup>/1000S. : + - 3.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 500  
guide sleeve

travel mm : 2.50  
Tolerance mm : + - 0.20

Rated speed rpm : 1300  
guide sleeve

travel mm : 7.25  
Tolerance mm : + - 0.05

Rated speed rpm : 1000  
guide sleeve

travel mm : 5.15  
Tolerance mm : + - 0.15

Rated speed rpm : 800  
guide sleeve

travel mm : 4.15  
Tolerance mm : + - 0.15

Rated speed rpm : 350  
guide sleeve

travel mm : 0.95

##### CONTROL LEVER

control lever position degree : 62.0  
tolerance degree : + - 4.0

RATED SPEED  
rack travel mm : 11.00  
Rated speed rpm : 1365

Tolerance 1/min : + - 5

rack travel mm : 4.00  
Rated speed rpm : 1485

Tolerance 1/min : + - 15

rack travel mm : 0.50  
Tolerance mm : + - 0.50

Rated speed rpm : 1600

##### LOW IDLE

control lever position degree : 15.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 7.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 660  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 9.50

Rated speed rpm : 405

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.35  
Tolerance mm : + 0.05

Rated speed rpm : 900  
rack travel mm : 12.35  
Tolerance mm : + 0.05

Rated speed rpm : 1015  
rack travel mm : 12.15  
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 600  
rack travel mm : 12.35  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.35  
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 335  
rack travel mm : 12.10

Tolerance mm : + 0.10

Pressure hPa : 245  
rack travel mm : 11.65  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 230  
Rated speed rpm : < 290

Check speed 1/min : > 210  
Check speed 1/min : < 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 600  
Rated speed rpm : 800  
Del. quantity cm<sup>3</sup>/1000 strokes : 103.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure hPa : 600  
Rated speed rpm : 900  
Del. quantity cm<sup>3</sup>/1000 strokes : 109.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 70.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 10.0

Check tolerance : + 14.0  
cm<sup>3</sup>/1000S.

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 354

Injection pump  
Pump designation : PES6P110A72CRS3158  
EP type number : 9 400 087 049

Governor  
Governor design. : RQV350...1300PA787  
Governor no. : 9 420 080 218

Cust. part No. :

### Customer-spec. information:

Customer : FORD  
Motor : 6,6 L-TC  
Power KW : 125.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.30  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

### Beginning of delivery difference

and maximum rack  
travel : 10.50  
Tolerance mm : ± 1.50  
Difference ° CS : 4.00

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65  
Tolerance mm : ± 0.05

Del. quantity  
cm³/1000 strokes : 113.5

Tolerance  
cm³/1000 strokes : ± 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 3.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 7.80  
Tolerance mm : + 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 22.0

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.5

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance cm<sup>3</sup>/1000S. : 5.5

#### (R) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 500  
guide sleeve

travel mm : 2.50  
Tolerance mm : + 0.20

Rated speed rpm : 1300  
guide sleeve

travel mm : 7.25  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
guide sleeve

travel mm : 5.15  
Tolerance mm : + 0.15

Rated speed rpm : 800  
guide sleeve

travel mm : 4.15  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve

travel mm : 0.95

Tolerance mm : + 0.35

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
Rated speed rpm : 1350

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure hPa : -

Del. quantity cm<sup>3</sup>/1000 strokes : 113.5

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 3.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever position degree : 62.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 10.60  
Rated speed rpm : 1365  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1485  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1600

##### LOW IDLE

control lever position degree : 15.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 7.80  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 720  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 9.50

Rated speed rpm : 405

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.65  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.15  
Tolerance mm : + 0.05

Rated speed rpm : 900  
rack travel mm : 12.10  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
rack travel mm : 11.85  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 230  
Rated speed rpm : < 290

Check speed 1/min : > 210  
Check speed 1/min : < 310

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure

hPa : -  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 103.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 367

Injection pump  
Pump designation : PES6P110A720RS3151  
EP type number : 9 400 087 047

Governor  
Governor design. : RQV350...1200PA777  
Governor no. : 9 420 080 234

Cust. part No. :

## Customer-spec. information

Customer : FORD  
Motor : 7,8 L TC  
Power KW : 165.6

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.30  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 14.15  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350  
 Rack travel in mm : 7.50  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 2.50  
 Tolerance mm : ± 0.20  
 Rated speed rpm : 1300  
 guide sleeve  
 travel mm : 7.25  
 Tolerance mm : ± 0.05  
 Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 5.15  
 Tolerance mm : ± 0.15  
 Rated speed rpm : 800  
 guide sleeve  
 travel mm : 4.15  
 Tolerance mm : ± 0.15  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 0.95  
 Tolerance mm : ± 0.35

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1350  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure  
 hPa : 800  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 142.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 60.0  
 tolerance degree : ± 4.0  
 RATED SPEED  
 rack travel mm : 13.10  
 Rated speed rpm : 1265  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1440  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1600

##### LOW IDLE

control lever  
 position degree : 15.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350

rack travel mm : 7.50  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 650  
Tolerance 1/min : + - 30

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 405

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 14.15  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 14.15  
Tolerance mm : + - 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 14.15  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 12.15  
Tolerance mm : + - 0.05

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 390  
rack travel mm : 12.70  
Tolerance mm : + - 0.10

Pressure hPa : 580  
rack travel mm : 13.75  
Tolerance mm : + - 0.05

##### Start interlock

Rated speed rpm : > 230  
Rated speed rpm : < 290

Check speed 1/min : > 210

Check speed 1/min : < 310

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 3.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.02.97  
Test oil : ISO 4113

Combination No. : 9 400 087 418

Injection pump  
Pump designation : PES6P120A72CRS3234  
EP type number : 9 400 087 068

Governor  
Governor design. : RQV350...1150PA923  
: K  
Governor no. : 9 420 080 273

Cust. part No. :

### Customer-spec. information

Customer : FORD  
Motor : 7.8 Ltr  
Power KW : 179.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 072

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 75  
Tolerance l/h : + 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : + 1.0

Prestroke mm : 2.40  
Tolerance mm : + 0.05

Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.65  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350  
 Rack travel in mm : 5.60  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 29.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.90  
 Tolerance mm : + 0.10

Rated speed rpm : 1200  
 guide sleeve  
 travel mm : 9.60  
 Tolerance mm : + 0.10

Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 7.90  
 Tolerance mm : + 0.10

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 6.60  
 Tolerance mm : + 0.20

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 2.35  
 Tolerance mm : + 0.15

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1350  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 166.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spred  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 122.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 12.60  
 Rated speed rpm : 1215  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1350  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1450

##### LOW IDLE

control lever  
 position degree : 67.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.60  
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 6.90

Rated speed rpm : 425

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 13.65  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 12.20  
Tolerance mm : + 0.10

Rated speed rpm : 550  
rack travel mm : 11.20  
Tolerance mm : + 0.20

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1150  
Pressure hPa : 900  
rack travel mm : 13.65  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 8.20  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 635  
rack travel mm : 12.70  
Tolerance mm : + 0.20

Pressure hPa : 365  
rack travel mm : 9.65  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check speed 1/min : > 80  
Check speed 1/min : < 310

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 168.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 106.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.00  
Tolerance mm : + 0.40  
Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance cm<sup>3</sup>/1000S. : + 24.0

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity cm<sup>3</sup>/1000 strokes : 29.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 5.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 429

Injection pump  
Pump designation : PES6P120A720RS3256  
EP type number : 9 400 087 079

Governor  
Governor design. : RQV350...1300PA1096  
Governor no. : 9 420 080 349

Cust. part No. : 0180746502

### Customer-spec. information

Customer : MBB  
Motor : OM 366 LA  
Power KW : 156.6

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.05  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 5.10  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350  
 Rack travel in mm : 7.65  
 Tolerance mm : ± 0.15  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 6.45  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 8.50  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.25  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 650  
 guide sleeve  
 travel mm : 4.15  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1460  
 guide sleeve  
 travel mm : 9.55  
 Tolerance mm : ± 0.25

#### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1360  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
 position degree : 112.0  
 tolerance degree : ± 4.0  
 RATED SPEED  
 rack travel mm : 10.80  
 Rated speed rpm : 1345  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1455  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1570

#### LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree : ± 4.0

**Testing:**

Rated speed rpm : 350  
 rack travel mm : 7.65  
 Tolerance mm : + - 0.15

Rated speed rpm : 250

CRT mm min. : > 9.50

Rated speed rpm : 375

**TORQUE CONTROL**

Rated speed rpm : 1000  
 rack travel mm : 5.10  
 Tolerance mm : + - 0.30

Rated speed rpm : 1300  
 rack travel mm : 11.90  
 Tolerance mm : + - 0.10

Rated speed rpm : 800  
 rack travel mm : 11.90  
 Tolerance mm : + - 0.10

**ANEROID/ALTITUDE COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
 Pressure hPa : 1200  
 rack travel mm : 11.90  
 Tolerance mm : + - 0.10

Pressure hPa : -  
 Rated speed rpm : 500

**MEASUREMENT**

Rated speed rpm : 500  
 Pressure hPa : 600  
 rack travel mm : 2.00  
 Tolerance mm : + - 0.10

Pressure hPa : 300  
 rack travel mm : 0.80  
 Tolerance mm : + - 0.10

**Start interlock**

Rated speed rpm : > 100  
 Rated speed rpm : < 270

Check speed 1/min : > 80  
 Check speed 1/min : < 290

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure hPa : 1200  
 Rated speed rpm : 1300  
 Del. quantity cm<sup>3</sup>/1000 strokes : 158.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure hPa : 1200  
 Rated speed rpm : 800  
 Del. quantity cm<sup>3</sup>/1000 strokes : 143.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 5.0

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 70.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
 Del. quantity cm<sup>3</sup>/1000 strokes : 110.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 10.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 14.0

---

**LOW IDLE**

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 431

Injection pump  
Pump designation : PES6P120A720RS3256  
EP type number : 9 400 087 080

Governor:  
Governor design. : RQV350...1300PA1096  
: 2  
Governor no. : 9 420 080 351

Cust. part No. : 0180746402

## Customer-spec. information

Customer : MBB  
Motor : OM 365 LA  
Power KW : 141.7

## TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 683 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.05  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 5.10  
Tolerance mm : + 0.30

Del. quantity  
cm³/1000 strokes : 18.5

Tolerance  
cm³/1000 strokes : + 1.5

Check tolerance  
cm³/1000S. : + 4.5

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

Rated speed rpm : 350  
 Rack travel in mm : 7.65  
 Tolerance mm : + 0.15  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 6.45  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 8.50  
 Tolerance mm : + 0.10  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.25  
 Tolerance mm : + 0.25  
 Rated speed rpm : 650  
 guide sleeve  
 travel mm : 4.15  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1460  
 guide sleeve  
 travel mm : 9.55  
 Tolerance mm : + 0.25

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1360  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

##### CONTROL LEVER

control lever  
 position degree : 112.0  
 tolerance degree : + 4.0  
 RATED SPEED  
 rack travel mm : 9.70  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1440  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1550

##### LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350

rack travel mm : 7.65  
Tolerance mm : + 0.15

Rated speed rpm : 250

CRT mm min. : > 9.50

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 5.10  
Tolerance mm : + 0.30

Rated speed rpm : 1300  
rack travel mm : 10.80  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 10.80  
Tolerance mm : + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 10.80  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 340  
rack travel mm : 0.95  
Tolerance mm : + 0.15

Pressure hPa : 250  
rack travel mm : 0.60  
Tolerance mm : + 0.10

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check speed 1/min : > 80  
Check speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200  
Rated speed rpm : 1300  
Del. quantity cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure hPa : 1200  
Rated speed rpm : 800  
Del. quantity cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance cm<sup>3</sup>/1000S. : + 14.0

---

**LOW IDLE**

Rated speed rpm : 350  
Del. quantity  
cm3/1000 strokes : 17.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0  
Spread  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 449

Injection pump  
Pump designation : PES6P120A320/3RS3264  
EP type number : 9 400 087 075

Governor  
Governor design. : RQV350...1100PA973  
Governor no. : 9 420 080 293

Cust. part No. : 3354438

---

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 CTAA - 8.3 !  
Power KW : 216.6

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### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + - 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 3.50  
Tolerance mm : + - 0.05  
Check tolerance mm : + - 0.10

Rack travel in mm : 10.50  
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + - 0.50  
Check tolerance \*NW : + - 0.75

### Start of delivery blocking

\*NW after s.o.d. : 8.00  
Tolerance : + - 0.10  
Check tolerance \*NW : + - 0.23

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.85  
Tolerance mm : + - 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
 Rated speed rpm : 350  
 Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 9.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1400  
 guide sleeve  
 travel mm : 9.00  
 Tolerance mm : + 0.20  
 Rated speed rpm : 1150  
 guide sleeve  
 travel mm : 7.05  
 Tolerance mm : + 0.05  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.60  
 Tolerance mm : + 0.20  
 Rated speed rpm : 650  
 guide sleeve  
 travel mm : 4.50  
 Tolerance mm : + 0.20

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1325  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure hPa : 1300  
 Del. quantity cm<sup>3</sup>/1000 strokes : 204.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 55.0  
 tolerance degree : + 4.0

control lever  
 position degree : 111.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 10.80  
 Rated speed rpm : 1165  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1500

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 15.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. : > 8.00

Rated speed rpm : 500

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 11.85  
Tolerance mm :  $\pm$  0.05

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 880  
rack travel mm : 2.25  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 480  
rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290  
Check speed 1/min : > 80  
Check speed 1/min : < 310

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1300  
Rated speed rpm : 700  
Del. quantity cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 117.5  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  19.0

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity cm<sup>3</sup>/1000 strokes : 9.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 456

Injection pump  
Pump designation : PE6P120A720RS7126  
EP type number : 0 412 626 815

Governor  
Governor design. : RQV200...1050PA725  
Governor no. : 0 421 813 814

Cust. part No. : 1673688

## Customer-spec. information

Customer : SCANIA  
Motor : DS11

## TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + - 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 5.05  
Tolerance mm : + - 0.05  
Check  
tolerance mm : + - 0.10

Rack travel in mm : 10.50  
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + - 0.50  
Check  
tolerance \*NW : + - 0.75

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15  
Tolerance mm : + - 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 231.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + - 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 \_\_\_\_\_

Rated speed rpm : 225  
 Rack travel in mm : 4.60  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1095  
 guide sleeve  
 travel mm : 8.30  
 Tolerance mm : + 0.10  
 Rated speed rpm : 225  
 guide sleeve  
 travel mm : 1.40  
 Tolerance mm : + 0.20  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 2.60  
 Tolerance mm : + 0.30  
 Rated speed rpm : 650  
 guide sleeve  
 travel mm : 4.30  
 Tolerance mm : + 0.30  
 Rated speed rpm : 1215  
 guide sleeve  
 travel mm : 9.90  
 Tolerance mm : + 0.20

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1200  
 Rack travel in mm : 10.50  
 Tolerance mm : + 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 62.0  
 tolerance degree : + 4.0

control lever  
 position degree : 117.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 13.10  
 Rated speed rpm : 1095  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1215  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1320

##### LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : + 4.0

control lever  
position degree : 10.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 225  
rack travel mm : 4.60  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 6.10

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 14.15  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 14.15  
Tolerance mm : + 0.05

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 14.15  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250  
rack travel mm : 11.20  
Tolerance mm : + 0.10

Pressure hPa : 510  
rack travel mm : 13.05  
Tolerance mm : + 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 25.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 29.0

LOW IDLE

Rated speed rpm : 225  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 458

Injection pump  
Pump designation : PE6P120A320RS3186  
EF type number : 0 411 826 756

Governor  
Governor design. : RQV250...1025PA657  
: 9  
Governor no. : 9 420 080 312

Cust. part No. : 8124324

### Customer-spec. information

Customer : VOLVO-TRUCK  
Motor : TD102FS  
Power KW : 250.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 2.65  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.15  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 211.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000s. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 4.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.50  
Tolerance mm : + 0.20

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.20  
Tolerance mm : + 0.10

Rated speed rpm : 500  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.40

Rated speed rpm : 700  
guide sleeve  
travel mm : 6.50  
Tolerance mm : + 0.20

Rated speed rpm : 1025  
guide sleeve  
travel mm : 7.55  
Tolerance mm : + 0.25

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1080  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 65.0  
tolerance degree : + 4.0

control lever  
position degree : 120.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 11.10  
Rated speed rpm : 1090  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1160  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 63.0  
tolerance degree : + 4.0

control lever  
position degree : 8.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 4.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100  
CRT mm min. : > 5.40  
Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.15  
Tolerance mm : + - 0.05

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.15  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 425  
rack travel mm : 2.85  
Tolerance mm : + - 0.15

Pressure hPa : 75  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 459

Injection pump  
Pump designation : PES6P120A720LS7181  
: 0  
EP type number : 0 412 726 870

Governor  
Governor design. : RQ300/1050PA911-2  
Governor no. : 9 420 080 313

Cust. part No. : 0160743602

## Customer-spec. information

Customer : MBB  
Motor : OM447 LA  
Power KW : 298.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 15.40  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300  
 Rack travel in mm : 6.00  
 Tolerance mm : + - 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 15.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1120  
 guide sleeve  
 travel mm : 7.45  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.75  
 Tolerance mm : + - 0.25  
 Rated speed rpm : 600  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : + - 0.10  
 Rated speed rpm : 1160  
 guide sleeve  
 travel mm : 10.00  
 Tolerance mm : + - 0.30

---

##### GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm : + - 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 280.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
 position degree : 40.0  
 tolerance degree : + - 4.0  
 control lever  
 position degree : 101.0  
 tolerance degree : + - 4.0  
 RATED SPEED  
 rack travel mm : 14.00  
 Rated speed rpm : 1103  
 Tolerance 1/min : + - 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : + - 15  
 rack travel mm : 0.75  
 Tolerance mm : + - 0.75  
 Rated speed rpm : 1300

---

##### LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + - 4.0

control lever  
position degree : 11.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : + - 20

Rated speed rpm : 100  
CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 15.40  
Tolerance mm : + - 0.10

Rated speed rpm : 1050  
rack travel mm : 15.00  
Tolerance mm : + - 0.10

Rated speed rpm : 700  
rack travel mm : 16.20  
Tolerance mm : + - 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600  
Pressure hPa : 1050

MEASUREMENT

Pressure hPa : 360  
rack travel mm : -4.50  
Tolerance mm : + - 0.10

Pressure hPa : 740  
rack travel mm : -1.30  
Tolerance mm : + - 0.10

Pressure hPa : 1340  
rack travel mm : 0.30  
Tolerance mm : + - 0.10

Pressure hPa : 1440

rack travel mm : 0.55  
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 298.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 460

Injection pump  
Pump designation : PES6P120A720LS7114  
: 3  
EP type number : 0 412 726 867

Governor  
Governor design. : RQ300/1050PA911-3  
Governor no. : 9 420 080 314

Cust. part No. : 0140748502

## Customer-spec. information

Customer : MBB  
Motor : OM447 LA  
Power KW : 260.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.50  
Tolerance mm : + 0.10

Del. quantity  
cm³/1000 strokes : 226.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000s. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 9.0

Rated speed rpm : 300  
 Rack travel in mm : 6.00  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : ± 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1125  
 guide sleeve  
 travel mm : 7.30  
 Tolerance mm : ± 0.20  
 Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.75  
 Tolerance mm : ± 0.15  
 Rated speed rpm : 600  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 1175  
 guide sleeve  
 travel mm : 9.45  
 Tolerance mm : ± 0.25

##### GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 800  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 226.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 34.0  
 tolerance degree : ± 4.0  
 control lever  
 position degree : 99.0  
 tolerance degree : ± 4.0  
 RATED SPEED  
 rack travel mm : 12.40  
 Rated speed rpm : 1103  
 Tolerance 1/min : ± 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1175  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.75  
 Tolerance mm : ± 0.75  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : ± 4.0

control lever  
position degree : 13.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min : + - 20

Rated speed rpm : 100

CRT mm min. : > 9.00

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 13.50  
Tolerance mm : + - 0.10

Rated speed rpm : 1050  
rack travel mm : 13.40  
Tolerance mm : + - 0.10

Rated speed rpm : 800  
rack travel mm : 14.10  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### 2-stage LDA setting

Rated speed rpm : 600  
Pressure hPa : 800

#### MEASUREMENT

Pressure hPa : 240  
rack travel mm : -2.80  
Tolerance mm : + - 0.10

Pressure hPa : 560  
rack travel mm : -0.80  
Tolerance mm : + - 0.10

Pressure hPa : 920  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

Pressure hPa : 980

+ rack travel mm : 0.45  
+ Tolerance mm : + - 0.05

+ Start interlock

+ Rated speed rpm : > 100  
+ Rated speed rpm : < 220

+ Check  
+ speed 1/min : > 80  
+ Check  
+ speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 219.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 461

Injection pump  
Pump designation : PE5SP120A720LS7174  
: 0  
EP type number : 0 412 725 815

Governor  
Governor design. : RQ300/1050PA774-6  
Governor no. : 9 420 080 315

Cust. part No. : 0140748202

## Customer-spec. information

Customer : MBB  
Motor : OM449 A  
Power KW : 184.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300  
 Rack travel in mm : 6.80  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1110  
 guide sleeve  
 travel mm : 6.45  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.15  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 600  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 1170  
 guide sleeve  
 travel mm : 9.15  
 Tolerance mm : ± 0.25

##### GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 194.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 36.0  
 tolerance degree : ± 4.0  
 control lever  
 position degree : 98.0  
 tolerance degree : ± 4.0  
 RATED SPEED  
 rack travel mm : 13.70  
 Rated speed rpm : 1103  
 Tolerance 1/min : ± 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1175  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.75  
 Tolerance mm : ± 0.75  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : ± 4.0

control lever  
position degree : 13.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.80  
Tolerance mm : + - 0.10

rack travel mm : 2.00  
Rated speed rpm : 410  
Tolerance 1/min : + - 20

Rated speed rpm : 100

CRT mm min. : > 10.00

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.00  
Tolerance mm : + - 0.10

Rated speed rpm : 1050  
rack travel mm : 14.70  
Tolerance mm : + - 0.10

Rated speed rpm : 750  
rack travel mm : 14.70  
Tolerance mm : + - 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600  
Pressure hPa : 700

MEASUREMENT

Pressure hPa : 340  
rack travel mm : -2.20  
Tolerance mm : + - 0.10

Pressure hPa : 520  
rack travel mm : -0.80  
Tolerance mm : + - 0.10

Pressure hPa : 960  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

Pressure hPa : 1040

rack travel mm : 0.45  
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 207.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 463

Injection pump  
Pump designation : PES6P120A320/3RS3264  
EP type number : 9 400 087 075

Governor  
Governor design. : RQV350...1100PA973  
Governor no. : 9 420 080 317

Cust. part No. :

---

**Customer-spec. information**  
Customer : CUMMINS  
Motor : 6 CTAA - 8.3 L  
Power KW : 186.4

---

**TEST BENCH REQUIREMENTS**

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.50  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

**Start of delivery blocking**

\*NW after s.o.d. : 8.00  
Tolerance : + 0.10  
Check  
tolerance °NW : + 0.23

Barrel no. : 1

**BASIC SETTING**

Rated speed rpm : 1100

Rack travel in mm : 10.55  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0

Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0  
  
 Rated speed rpm : 350  
 Rack travel in mm : 6.00  
 Tolerance mm : + - 0.10  
 Del. quantity cm<sup>3</sup>/1000 strokes : 9.5  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 6.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1400  
 guide sleeve travel mm : 9.00  
 Tolerance mm : + - 0.20  
  
 Rated speed rpm : 1150  
 guide sleeve travel mm : 7.05  
 Tolerance mm : + - 0.05  
  
 Rated speed rpm : 350  
 guide sleeve travel mm : 1.60  
 Tolerance mm : + - 0.20  
  
 Rated speed rpm : 650  
 guide sleeve travel mm : 4.50  
 Tolerance mm : + - 0.20

##### GUIDE SLEEVE POSITION

control lever position degree : - 1  
 Rated speed rpm : 1325  
  
 Rack travel in mm : 16.50  
 Tolerance mm : + - 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure hPa : 1000  
 Del. quantity cm<sup>3</sup>/1000 strokes : 174.0  
 Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
 Spread  
 Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever position degree : 55.0  
 tolerance degree : + - 4.0  
  
 control lever position degree : 109.0  
 tolerance degree : + - 4.0  
  
 RATED SPEED  
 rack travel mm : 9.50  
 Rated speed rpm : 1165  
 Tolerance 1/min : + - 5  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1320  
 Tolerance 1/min : + - 15  
  
 rack travel mm : 0.50  
 Tolerance mm : + - 0.50  
 Rated speed rpm : 1500

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

control lever  
position degree : 15.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 100  
CRT mm min. : > 8.00

Rated speed rpm : 500

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 10.55  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 10.55  
Tolerance mm : + 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 10.55  
Tolerance mm : + 0.05

Pressure hPa : -  
Rated speed rpm : 500

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 740  
rack travel mm : 1.10  
Tolerance mm : + 0.10

Pressure hPa : 550  
rack travel mm : 0.35  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290  
  
Check  
speed 1/min : > 80  
Check  
speed 1/min : < 310

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spred

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS****Note remarks**

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 464

Injection pump  
Pump designation : PES6P120A720LS7257  
: 0  
EP type number : 9 400 087 086

Governor  
Governor design. : RQV300...1050PA1029  
Governor no. : 9 420 080 325

Cust. part No. : 0220746202

**Customer-spec. information**

Customer : MBB  
Motor : OM 447 LA  
Power KW : 257.6

**TEST BENCH REQUIREMENTS**

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

**BASIC SETTING**

Rated speed rpm : 700

Rack travel in mm : 13.35  
Tolerance mm : ± 0.05

Del. quantity  
cm³/1000 strokes : 237.0

Tolerance  
cm³/1000 strokes : ± 1.0

Check tolerance  
cm³/1000s. : ± 4.0

Spread

Tolerance  
cm³/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50

Tolerance mm : + 0.10

Del. quantity cm<sup>3</sup>/1000 strokes : 17.0

Tolerance cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance cm<sup>3</sup>/1000S. : + 6.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 1120

Rack travel in mm : 16.50

Tolerance mm : + 1.30

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure hPa : 1000

Del. quantity cm<sup>3</sup>/1000 strokes : 237.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spred

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance cm<sup>3</sup>/1000S. : 9.0

---

### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

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#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 700

guide sleeve

travel mm : 5.45

Tolerance mm : + 0.25

Rated speed rpm : 1050

guide sleeve

travel mm : 7.80

Tolerance mm : + 0.10

Rated speed rpm : 300

guide sleeve

travel mm : 0.75

Tolerance mm : + 0.25

Rated speed rpm : 500

guide sleeve

travel mm : 3.55

Tolerance mm : + 0.25

Rated speed rpm : 1165

guide sleeve

travel mm : 9.45

Tolerance mm : + 0.25

---

#### GUIDE SLEEVE POSITION

control lever position degree : - 1

---

#### CONTROL LEVER

control lever position degree : 55.0

tolerance degree : + 4.0

control lever position degree : 120.0

tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 1095

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1165

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1300

---

#### LOW IDLE

control lever position degree : 82.0

tolerance degree : + 4.0

control lever position degree : 17.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.35  
Tolerance mm : + - 0.05

Rated speed rpm : 1050  
rack travel mm : 13.05  
Tolerance mm : + - 0.05

Rated speed rpm : 800  
rack travel mm : 13.35  
Tolerance mm : + - 0.05

Rated speed rpm : 950  
rack travel mm : 13.05  
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.35  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600  
rack travel mm : 2.35  
Tolerance mm : + - 0.15

Pressure hPa : 350  
rack travel mm : 0.80  
Tolerance mm : + - 0.10

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm3/1000 strokes : 227.0  
Tolerance  
cm3/1000 strokes : + - 2.0  
Check tolerance  
cm3/1000S. : + - 5.0  
Spread  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 126.0  
Tolerance  
cm3/1000 strokes : + - 1.0  
Check tolerance  
cm3/1000S. : + - 4.0  
Spread  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 190.0  
Tolerance  
cm3/1000 strokes : + - 10.0  
Check tolerance  
cm3/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 467

Injection pump  
Pump designation : PES5P120A720LS7174  
: 0  
EF type number : 0 412 725 815

Governor  
Governor design. : RQ300/1050PA774-8  
Governor no. : 9 420 080 328

Cust. part No. : 0200749202

## Customer-spec. information

Customer : MBB  
Motor : OM 449 A  
Power KW : 170.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300  
Rack travel in mm : 6.80  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1110  
guide sleeve  
travel mm : 6.45  
Tolerance mm : ± 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.15  
Tolerance mm : ± 0.25

Rated speed rpm : 600  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1170  
guide sleeve  
travel mm : 9.15  
Tolerance mm : ± 0.25

##### GUIDE SLEEVE POSITION

control lever  
position degree : 109

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 35.0  
tolerance degree : ± 4.0

control lever  
position degree : 97.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 13.00  
Rated speed rpm : 1103  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

control lever  
position degree : 14.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.80  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 415  
Tolerance 1/min : + 20

Rated speed rpm : 100  
CRT mm min. : > 9.50

TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 14.00  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
rack travel mm : 14.00  
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 800  
rack travel mm : 14.00  
Tolerance mm : + 0.10

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 11.05  
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 450  
rack travel mm : 13.25  
Tolerance mm : + 0.15

Pressure hPa : 270  
rack travel mm : 11.85  
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 800  
Rated speed rpm : 1050  
Del. quantity cm3/1000 strokes : 194.5  
Tolerance cm3/1000 strokes : + 1.5  
Check tolerance cm3/1000S. : + 4.5  
Spread Tolerance cm3/1000 strokes : 8.0  
Check tolerance cm3/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm3/1000 strokes : 132.0  
Tolerance cm3/1000 strokes : + 1.0  
Check tolerance cm3/1000S. : + 4.0  
Spread Tolerance cm3/1000 strokes : 8.0  
Check tolerance cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm3/1000 strokes : 160.0  
Tolerance cm3/1000 strokes : + 10.0  
Check tolerance cm3/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300  
Del. quantity cm3/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 472

Injection pump  
Pump designation : PES6P120A720LS7114  
: 3  
EP type number : 0 412 726 867

Governor  
Governor design. : RQV300...1050PA1041  
: 1  
Governor no. : 9 420 080 335

Cust. part No. :

### Customer-spec. information

Customer : MBB  
Motor : OM447 LA  
Power KW : 257.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 \_\_\_\_\_

Rated speed rpm : 300  
 \_\_\_\_\_  
 Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 7.65  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.40  
 Tolerance mm : + 0.20  
 \_\_\_\_\_  
 Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.25  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 900  
 guide sleeve  
 travel mm : 5.85  
 Tolerance mm : + 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 1210  
 guide sleeve  
 travel mm : 9.55  
 Tolerance mm : + 0.25

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1140  
 \_\_\_\_\_  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 780  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 226.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 59.0  
 tolerance degree : + 4.0  
 \_\_\_\_\_  
 control lever  
 position degree : 114.0  
 tolerance degree : + 4.0  
 \_\_\_\_\_  
 RATED SPEED  
 rack travel mm : 12.20  
 Rated speed rpm : 1095  
 Tolerance 1/min : + 5  
 \_\_\_\_\_  
 rack travel mm : 4.00  
 Rated speed rpm : 1180  
 Tolerance 1/min : + 15  
 \_\_\_\_\_  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
 position degree : 67.0  
 tolerance degree : + 4.0

control lever  
position degree : 12.0  
tolerance degree : + - 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 413

#### TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 13.50  
Tolerance mm : + - 0.10

Rated speed rpm : 1050  
rack travel mm : 13.20  
Tolerance mm : + - 0.10

Rated speed rpm : 800  
rack travel mm : 14.10  
Tolerance mm : + - 0.10

Rated speed rpm : 930  
rack travel mm : 13.70  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### 2-stage LDA setting

Rated speed rpm : 600  
Pressure hPa : 780

#### MEASUREMENT

Pressure hPa : 240  
rack travel mm : -2.80  
Tolerance mm : + - 0.10

Pressure hPa : 560  
rack travel mm : -0.80  
Tolerance mm : + - 0.10

Pressure hPa : 920  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

Pressure hPa : 980  
rack travel mm : 0.45  
Tolerance mm : + - 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500  
Rated speed rpm : 1050  
Del. quantity cm<sup>3</sup>/1000 strokes : 215.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 1500  
Rated speed rpm : 800  
Del. quantity cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 473

Injection pump  
Pump designation : PE6P120A320RS3178-1  
EP type number : 0 411 826 764

Governor  
Governor design. : RQV250... 250PA921  
Governor no. : 0 421 813 796

Cust. part No. : 478162P04

### CUSTOMER-SPEC. INFORMATION

Customer : VOLVO-TRUCK  
Motor : TD 122 FK, FR  
Power KW : 287.0

### TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.65  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.30  
Check  
tolerance \*NW : + 0.75

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread \_\_\_\_\_

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 \_\_\_\_\_

Rated speed rpm : 250  
 Rack travel in mm : 4.95  
 Tolerance mm : ± 0.15  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 985  
 guide sleeve  
 travel mm : 8.20  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.20  
 Tolerance mm : ± 0.20  
 Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.90  
 Tolerance mm : ± 0.30  
 Rated speed rpm : 700  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 1060  
 guide sleeve  
 travel mm : 9.60  
 Tolerance mm : ± 0.20

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1000  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 260.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 65.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 121.0  
 tolerance degree : ± 4.0

**RATED SPEED**  
 rack travel mm : 13.20  
 Rated speed rpm : 995  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1085  
 Tolerance 1/min : ± 15

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1200

##### LOW IDLE

control lever  
 position degree : 65.0  
 tolerance degree : ± 4.0

control lever  
position degree : 10.0  
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 4.95  
Tolerance mm : + - 0.15

Rated speed rpm : 100

CRT mm min. : > 6.50

Rated speed rpm : 315

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 14.25  
Tolerance mm : + - 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 14.25  
Tolerance mm : + - 0.05

Pressure hPa : -  
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 865  
rack travel mm : 3.80  
Tolerance mm : + - 0.10

Pressure hPa : 100  
rack travel mm : 0.25  
Tolerance mm : + - 0.05

Start interlock

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + - 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 24.0

---

LOW IDLE

Rated speed rpm : 250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.02.97  
Test oil : ISO 4113

Combination No. : 9 400 087 475

Injection pump  
Pump designation : PES5P120A720LS7280  
EP type number : 9 400 087 087

Governor  
Governor design. : RQV300...950PA1029  
Governor no. : 9 420 080 360

Cust. part No. : 0240742602

## Customer-spec. information

Customer : MBB  
Motor : OM 449 LA  
Power KW : 220.6

## TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.65  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45  
Tolerance mm : + 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 245.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

Rated speed rpm : 300  
  
Rack travel in mm : 5.30  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

FULL LOAD DELIVERY AT FULL LOAD STOP  
  
Rated speed rpm : 700  
Aneroid pressure  
hPa : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.45  
Tolerance mm : + 0.25  
  
Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.80  
Tolerance mm : + 0.10  
  
Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : + 0.25  
  
Rated speed rpm : 500  
guide sleeve  
travel mm : 3.55  
Tolerance mm : + 0.25  
  
Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.45  
Tolerance mm : + 0.25

##### CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : + 4.0

control lever  
position degree : 117.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 12.50  
Rated speed rpm : 985  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : + 4.0

control lever  
position degree : 18.0  
tolerance degree : + 4.0

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1120

### Testing:

Rated speed rpm	:	300
rack travel mm	:	5.30
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	100
CRT mm min.	:	> 9.00
Rated speed rpm	:	325

### TORQUE CONTROL

Rated speed rpm	:	700
rack travel mm	:	13.45
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	950
rack travel mm	:	13.45
Tolerance mm	:	+ - 0.05

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:	500
Pressure hPa	:	1300
rack travel mm	:	13.45
Tolerance mm	:	+ - 0.05

Pressure hPa	:	-
Rated speed rpm	:	500

#### MEASUREMENT

Rated speed rpm	:	500
Pressure hPa	:	600
rack travel mm	:	2.45
Tolerance mm	:	+ - 0.15
Pressure hPa	:	400
rack travel mm	:	1.10
Tolerance mm	:	+ - 0.10

#### Start interlock

Rated speed rpm	:	> 100
Rated speed rpm	:	< 220

Check speed 1/min	:	> 80
Check speed 1/min	:	< 240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	:	1300
hPa	:	1300
Rated speed rpm	:	950
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	241.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ - 2.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ - 5.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	12.0

Aneroid pressure	:	-
hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	121.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ - 1.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ - 4.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	9.0

### STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	220.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ - 10.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ - 14.0

### LOW IDLE

Rated speed rpm	:	300
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	12.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ - 3.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ - 6.0
Spread		

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet



## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 476

Injection pump  
Pump designation : PES6P120A720LS7181  
: 0  
EP type number : 0 412 726 870

Governor  
Governor design. : RQV300...1050PA1055  
Governor no. : 9 420 080 337

Cust. part No. : 0190741502

## Customer-spec. information

Customer : MBB  
Motor : OM447LA  
Power KW : 301.8

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.15  
Tolerance mm : + 0.05

Del. quantity  
cm³/1000 strokes : 266.0

Tolerance  
cm³/1000 strokes : + 1.0

Check tolerance  
cm³/1000S. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 \_\_\_\_\_

Rated speed rpm : 300  
 \_\_\_\_\_  
 Rack travel in mm : 6.00  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 14.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 7.65  
 Tolerance mm : ± 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.40  
 Tolerance mm : ± 0.20  
 \_\_\_\_\_  
 Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.25  
 Tolerance mm : ± 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 900  
 guide sleeve  
 travel mm : 5.85  
 Tolerance mm : ± 0.25  
 \_\_\_\_\_  
 Rated speed rpm : 1210  
 guide sleeve  
 travel mm : 9.55  
 Tolerance mm : ± 0.25

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1140  
 \_\_\_\_\_  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 266.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 60.0  
 tolerance degree : ± 4.0  
 \_\_\_\_\_  
 control lever  
 position degree : 115.0  
 tolerance degree : ± 4.0  
 \_\_\_\_\_  
 RATED SPEED  
 rack travel mm : 14.10  
 Rated speed rpm : 1095  
 Tolerance 1/min : ± 5  
 \_\_\_\_\_  
 rack travel mm : 4.00  
 Rated speed rpm : 1195  
 Tolerance 1/min : ± 15  
 \_\_\_\_\_  
 rack travel mm : 0.75  
 Tolerance mm : ± 0.75  
 Rated speed rpm : 1300

##### LOW IDLE

control lever  
 position degree : 68.0  
 tolerance degree : ± 4.0

control lever  
position degree : 13.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm	:	300
rack travel mm	:	6.00
Tolerance mm	:	+ 0.10
Rated speed rpm	:	100
CRT mm min.	:	> 8.00
Rated speed rpm	:	400

#### TORQUE CONTROL

Rated speed rpm	:	1050
rack travel mm	:	15.15
Tolerance mm	:	+ 0.05
Rated speed rpm	:	700
rack travel mm	:	15.15
Tolerance mm	:	+ 0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:	600
Pressure hPa	:	1200
rack travel mm	:	15.15
Tolerance mm	:	+ 0.05

Pressure hPa	:	-
Rated speed rpm	:	600

#### MEASUREMENT

Rated speed rpm	:	600
Pressure hPa	:	820
rack travel mm	:	3.85
Tolerance mm	:	+ 0.15
Pressure hPa	:	500
rack travel mm	:	1.30
Tolerance mm	:	+ 0.10

#### Start interlock

Rated speed rpm	:	> 100
Rated speed rpm	:	< 220

Check		
speed 1/min	:	> 80
Check		
speed 1/min	:	< 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	1200
Rated speed rpm	:	700
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	269.5
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 2.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 5.0

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	133.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 4.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	9.0

#### STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	260.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 10.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 14.0

#### LOW IDLE

Rated speed rpm	:	300
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	14.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 3.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 6.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

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End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 477

Injection pump  
Pump designation : PES6P120A720RS3256  
EP type number : 9 400 087 080

Governor  
Governor design. : RQV350...1300PA1098  
Governor no. : 9 420 080 353

Cust. part No. : 0240747202

## Customer-spec. information

Customer : MBB  
Motor : OM 366 LA  
Power KW : 125.1

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 3.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.80  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350  
 Rack travel in mm : 7.65  
 Tolerance mm : ± 0.15  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 6.45  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 8.50  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.25  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 650  
 guide sleeve  
 travel mm : 4.15  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1460  
 guide sleeve  
 travel mm : 9.55  
 Tolerance mm : ± 0.25

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1360  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 141.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
 position degree : 112.0  
 tolerance degree : ± 4.0  
 RATED SPEED  
 rack travel mm : 9.70  
 Rated speed rpm : 1345  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1440  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1550

##### LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350

rack travel mm : 7.65  
Tolerance mm : + - 0.15

Rated speed rpm : 250

CRT mm min. : > 9.50

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 10.80  
Tolerance mm : + - 0.10

Rated speed rpm : 800  
rack travel mm : 10.80  
Tolerance mm : + - 0.10

Rated speed rpm : 1000  
rack travel mm : 5.10  
Tolerance mm : + - 0.30

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 10.80  
Tolerance mm : + - 0.10

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 420  
rack travel mm : 0.70  
Tolerance mm : + - 0.10

Pressure hPa : 350  
rack travel mm : 0.40  
Tolerance mm : + - 0.10

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check speed 1/min : > 80  
Check speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200  
Rated speed rpm : 800  
Del. quantity cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 1000  
Del. quantity cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.5  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance cm<sup>3</sup>/1000S. : 3.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance cm<sup>3</sup>/1000S. : + - 14.0

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**LOW IDLE**

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spred  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.01.97  
Test oil : ISO 4113

Combination No. : 9 400 087 478

Injection pump  
Pump designation : PES6P120A720RS3256  
EP type number : 9 400 087 080

Governor  
Governor design. : RQV350...1300PA1080  
Governor no. : 9 420 080 339

Cust. part No. :

## Customer-spec. information

Customer : MBB  
Motor : OM 366 LA  
Power KW : 139.8

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : + - 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : + - 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + - 1.0

Prestroke mm : 3.05  
Tolerance mm : + - 0.05  
Check  
tolerance mm : + - 0.10

Rack travel in mm : 20.50  
Tolerance mm : + - 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
Tolerance : + - 0.50  
Check  
tolerance \*NW : + - 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 5.10  
Tolerance mm : + - 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.5

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

Rated speed rpm : 350  
 Rack travel in mm : 7.65  
 Tolerance mm : + 0.15  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 6.45  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 8.50  
 Tolerance mm : + 0.10  
 Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.25  
 Tolerance mm : + 0.25  
 Rated speed rpm : 650  
 guide sleeve  
 travel mm : 4.15  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1460  
 guide sleeve  
 travel mm : 9.55  
 Tolerance mm : + 0.25

##### GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1360  
 Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

##### CONTROL LEVER

control lever  
 position degree : 112.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 9.70  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1440  
 Tolerance 1/min : + 15  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1550

##### LOW IDLE

control lever  
 position degree : 80.0  
 tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 350

rack travel mm : 7.65  
Tolerance mm : + - 0.15

Rated speed rpm : 250

CRT mm min. : > 9.50

Rated speed rpm : 375

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 5.10  
Tolerance mm : + - 0.30

Rated speed rpm : 1300  
rack travel mm : 10.80  
Tolerance mm : + - 0.10

Rated speed rpm : 800  
rack travel mm : 10.80  
Tolerance mm : + - 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 10.80  
Tolerance mm : + - 0.10

Pressure hPa : -  
Rated speed rpm : 500

##### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 340  
rack travel mm : 0.95  
Tolerance mm : + - 0.15

Pressure hPa : 250  
rack travel mm : 0.60  
Tolerance mm : + - 0.10

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check speed 1/min : > 80  
Check speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + - 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + - 14.0

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**LOW IDLE**

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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**End of test specification sheet**